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NAVAL MEDICAL RESEARCH UNIT NO. 2

APO San Francisco 96528

Command Historical Report

1984

OPNAV Report 5750.1

1984

COMMAND HISTORY OF

NAVAL MEDICAL RESEARCH UNIT NO.2

MANILA, R.P.

CAPTAIN VERNON D. SCHINSKI, MSC, USN

COMMANDING OFFICER

Commanding Officers and Dates of Commands

	From	To
Captain Robert A. PHILLIPS	13 Sep 1955	30 Oct 1965
Captain Raymond H. WATTEN	30 Oct 1965	29 Jul 1974
Captain P.F. Dirk VAN PEENEN	29 Jul 1974	1 Oct 1976
Captain Kurt SORENSEN	1 Oct 1976	1 Jul 1980
Captain Willian H. SCHROEDER	1 Jul 1980	20 Jan 1984
Captain Vernon D. SCHINSKI	20 Jan 1984	

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PART I

COMMAND MISSION

AND

ORGANIZATION

HISTORY OF THE
U.S. NAVAL MEDICAL RESEARCH UNIT NO. 2
IN THE REPUBLIC OF THE PHILIPPINES

The U. S. Naval Medical Research Unit No. 2 (NAMRU-2) was re-established in Taipei, Taiwan, Republic of China, in 1955 after operating under the Rockefeller Institute in New York and Guam during World War II (1942-1946). The primary function of the unit was, and still is, the study of infectious diseases of potential military significance in Asia. Shortly after the unit was established, the expertise of the scientific staff was recognized and requests were received from other Asian countries for assistance in the control, treatment and study of various infectious diseases.

The first investigation carried out in the Philippines by NAMRU-2 documented an increase in the incidence of Entamoeba histolytica infections at Cubi Point, U.S. Naval Air Station among Naval and indigenous populations.

In September 1961 an epidemic of cholera erupted in Manila and NAMRU-2 teams were again sent to the Philippines to begin a long and continuing association with San Lazaro Hospital and the Ministry of Health of the Philippines. The NAMRU-2 staff working with colleagues at San Lazaro Hospital in Manila modified and improved upon the Navy-developed, highly effective means of treating cholera accurately by assessing lost body fluids and replacement with appropriate intravenous solution. Fatalities among patients dropped within one week from a high 40% to less than 2%. NAMRU-2 physicians traveled throughout the Philippine Islands demonstrating these new techniques which resulted in the widespread use of the method and, more importantly, a decrease in mortality. It was soon realized, however, that fluid losses in pediatric cholera were unique and that children had to be treated differently than adults. Again, NAMRU-2-Philippine teams were able to modify pediatric therapy based upon documentation of the unique electrolyte losses in children. The mortality in pediatric cholera also decreased with the more appropriate therapy.

The oral treatment of cholera, developed under the direction of a former commanding officer of NAMRU-2 and subsequent director of the SEATO Research Laboratory in Bangladesh (now the International Diarrheal Disease Center) was first evaluated by NAMRU-2 Philippine investigators at the San Lazaro Hospital. As a result of these collaborative efforts, packages of electrolytes or salts for oral cholera treatment are now available for immediate use at health units throughout the Philippines and the world. The salts (Oresol) are receiving widespread use in the treatment of diarrhea.

In 1966 NAMRU-2 was asked to assist in an epidemic of dengue hemorrhagic fever that emerged in the Manila area. NAMRU-2's response was immediate and teams were once again dispatched to the San Lazaro Hospital. Patients were studied, blood specimens tested for dengue viruses and mosquitoes collected and examined for the viruses. These studies resulted in an elucidation of the pathophysiology of dengue hemorrhagic

fever and led to a better understanding of the disease. NAMRU-2 now maintains a surveillance for dengue in Manila. Sera are collected from patients with symptoms of dengue fever and dengue viruses types 1, 2, 3, and 4 looked for. All four serotypes have been isolated.

In early 1967, a new illness was reported from Northern Luzon, not far from two U.S. Military bases. By mid-1967 several hundred people had acquired the "mystery" disease and a large number had died. NAMRU-2 offered help to the Philippine Ministry of Health and sent teams to Manila and to the endemic area to assist in the treatment of the afflicted and to determine the cause of the disease. It was soon determined that the patients were infected with thousands of tiny worms which were responsible for signs and symptoms of abdominal pain, diarrhea, gurgling stomach, muscle wasting, loss of electrolytes, malabsorption and loss of body-weight. If patients went untreated they usually died. Soon after the collaborative effort began, treatment programs were instituted and the death rate decreased dramatically. Although fewer people died with the treatment that was used, many suffered relapses. New drugs were tested and evaluated, yet it required nearly 6 more years before a more suitable anthelminthic became available to treat the disease and prevent relapses. Today, with this new drug, relapses rarely occur.

Although the mortality decreased, infections continued to occur since the means by which the diseases spread remained unknown. Teams of Philippine and NAMRU-2 epidemiologists and parasitologists worked continuously for three years to determine the means by which the parasite was transmitted. Experimental studies showed that small fresh-water fish in the endemic area served as intermediate hosts for the parasite and man acquired the infection when the fish were eaten uncooked. The parasite, Capillaria philippinensis, was finally established in the laboratory and the unique life cycle, which includes internal multiplication of the worm, was demonstrated in laboratory animals. As a result of these years of effort, NAMRU-2 has gained the respect of scientists in the Philippines and elsewhere in Asia for continuing to work on the disease until some answers to the major questions were obtained. The studies are continuing in order to determine the reservoir of infection in nature. Fish-eating birds are suspected since they have been shown to be susceptible experimentally to infection, but this must be confirmed by finding naturally infected birds.

In addition to studies on intestinal capillariasis in Northern Luzon, NAMRU-2 has undertaken investigations on the prevalence of other parasitic diseases in the area, as well as seroepidemiologic studies of arboviruses, abnormal hemoglobins and the treatment and eradication of intestinal parasitic diseases from barrio populations. A small building has been constructed by the Ilocos Sur Provincial Government exclusively for laboratory use by NAMRU-2 and the Bureau of Research and Laboratories of the Philippine Ministry of Health. This is a base to carry out biomedical studies throughout Northern Luzon.

Zoonotic diseases in the Philippines have also been of interest to NAMRU-2. Teams of microbiologists from NAMRU-2 have worked closely with workers from the University of the Philippines College of Medicine to determine the prevalence and distribution of leptospirosis in animal populations throughout the Philippines. More recently, leptospirosis in

humans has been part of a program of study at San Lazaro Hospital and the Bureau of Research and Laboratories.

Scrub typhus is another zoonotic disease which had been studied among Negrito populations in the survival training area of Clark Air Force Base in the Philippines. NAMRU-2 teams have tested blood of the Negritos for antibodies to scrub typhus and other diseases. In addition, hundred of rats from the area and their ectoparasites have been examined for scrub typhus. Knowledge gained from these studies has been used to control exposure to this disease in U.S. Forces working in infected areas. Serologic testing for scrub and murine typhus has also been done in other areas and although evidence of exposure to murine typhus is widespread, the prevalence of scrub typhus is scattered.

A study of abnormal hemoglobins in Filipino populations has been a major effort to NAMRU-2 biochemists. This has been of considerable interest to the local medical community. The prevalence of heptoblobins, hemoglobins E, G., H, and J and the incidence of glucose-6-phosphate dehydrogenase (G-6-PD) deficiency have been determined.

In 1973 the Bureau of Research and Laboratories of the Ministry of Health asked NAMRU-2 to assist in a reported epidemic of amebiasis on the island of Cebu in the Central Philippines. A team, including physicians, parasitologists and technicians from the Bureau of Research and Laboratories and NAMRU-2 went to the area to investigate. Although amebiasis was endemic, the disease was not found to be epidemic. This study has led to a number of other biomedical surveys in the Philippines which include the collection of stools for bacterial and parasitic examination, sera for the detection of antibodies to a variety of infectious diseases, the collection of arthropod and snail vectors of disease and pertinent epidemiological information. The surveys have been conducted to provide base-line data with selection of the site. Over 17,000 people from the islands of Luzon, Cebu and Marinduque, Mindanao, Samar, Mindoro, Palawan, Panay, Catanduanes and Masbate have participated
in this program and the studies are providing a great deal of information on the distribution of parasitic, bacterial, viral and rickettsial diseases in the Islands. All of the information is made available to the Philippine Ministry of Health and to the local health agencies.

Since 1968 NAMRU-2 has maintained laboratory at San Lazaro Hospital in Manila. The laboratory was established to offer basic support for NAMRU-2 studies at the hospital and to provide a service to the hospital by performing certain laboratory procedures not usually done by the hospital laboratory. During the early years, the laboratory supported studies on cholera, intestinal capillariasis and the role of Vibrio parahemolyticus in diarrheal diseases. In later years, the laboratory's emphasis has been focused on surveillance for dengue fever, influenza, amebiasis, as well as the etiology of encephalitis, jaundice, meningitis and diarrhea. An extensive study on the causes of jaundice has shown hepatitis viruses to be responsible for most. Other causes of jaundice were found to be associated with salmonellosis, leptospirosis, amebic liver abscess, malaria, and schistosomiasis. An extensive study on the role of enterotoxigenic Escherichia coli in diarrheal diseases of children has incriminated this organism in 5% of the cases while reovirus-

like agents were found to be responsible for another 20% of the diarrhea. Studies on adult diarrhea are also being undertaken. Since amebiasis is seen at San Lazaro Hospital attempts are being made to improve method of diagnosis. Studies have also been done at the U.S. Naval Base at Subic Bay and at the Clark Air Force Base on the etiology of diarrhea.

Except for certain investigations conducted at U.S. military facilities, all of the work done by NAMRU-2 in the Philippines has been in collaboration with Filipino scientists. Throughout the years NAMRU-2 has gained an excellent reputation for expertise, professionalism and cooperation and, in addition, very warm friendships have developed between American and Filipino doctors, nurses and technicians. The teams have worked exceptionally well together and scientific contributions have been well received throughout the world. Information obtained from studies, be it from the hospital, or from the field, are first made available to health workers in the Philippines. Most of the scientific data are eventually published in medical or biological journals for wider distribution.

On 15 April 1979, NAMRU-2 closed the laboratories in Taipei, Taiwan and moved officially to Manila. Through the kindness of the San Lazaro Hospital, the Bureau of Research and Laboratories and the Philippine Ministry of Health, laboratory spaces have been made available to re-establish the NAMRU-2 expertise. Personnel were recruited and trained and new studies established on malaria, gastroenteritis, amebiasis, arthropod borne diseases and other parasitic, bacterial and viral diseases. A large battery of tests are becoming available using newer techniques. The laboratory may be small but it will be functional and should provide service to the U.S. Navy and the people of the Philippines.

Two existing stuctures (Pavilion 7 and 8) will be renovated by the Navy to further expand NAMRU-s capabilities. Pavilion 7, slated to be completed in 1985 will house a virology laboratory and administrative spaces. Pavilion 8 will become a state of the art rehydration laboratory to be used by the Philippine Ministry of Health at the San Lazaro Hospital compound to train health care providers in current methods of treating enteric diseases. Additionally, a new NAMRU Medical Library has recently been completed which will be shared with local health care providers.

COMMAND MISSION

The mission of the Navy Medical Research Unit No. 2, as assigned by the Navy, and the tasks to be performed to accomplish the mission, as assigned by the Commander, Naval Medical Command are to:

Conduct research and development on infectious diseases of military importance that are endemic or epidemic in its assigned geographical area.

Functions of NAMRU-2 are to:

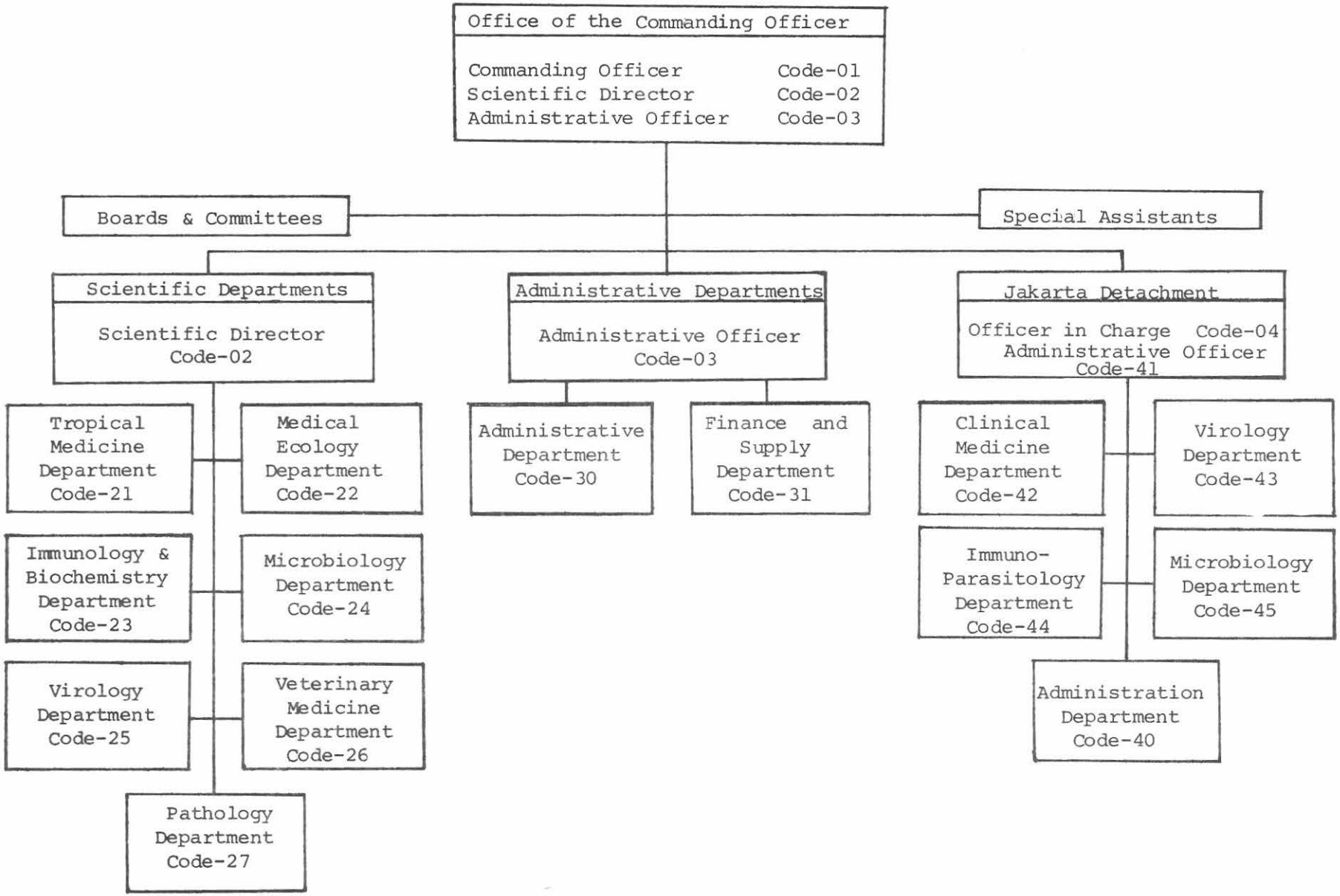
a. Conduct research on the ecology, etiology, epidemiology, immunology of infectious diseases prevalent in the Far East.

b. Develop, test, and evaluate methods for the diagnosis, treatment, prevention, and control of infectious diseases prevalent in the Far East.

c. Operate and maintain the U.S. Naval Medical Research Unit No. 2 Detachment, Jakarta, Indonesia.

d. Serve as an effective instrument of the U.S. Foreign Policy by initiating and continuing action programs which promote positive relations between the command and foreign nationals, and which assist individual Naval personnel and their families to work effectively, live with dignity and satisfaction, and function as positive representatives of the Navy and of the United States while overseas.

e. Provide or undertake such other appropriate function as may be authorized or directed by higher authority.



DATE:	APPROVED:	COMMAND RESPONSIBILITY:	AREA COORDINATOR:	U.S. NAVAL MEDICAL RESEARCH UNIT NO. 2 MANILA, REPUBLIC OF THE PHILIPPINES
10 March 84	VERNON D. SCHINSKI CAPT MSC USN	NAVMEDRSCHDEVCOM	COMUSNAVPHIL	

COMMAND ORGANIZATION

External Command Relationships

Command:	Naval Medical Research and Development Command National Capital Region Navy Medical Command
Support:	Naval Medical Research and Development Command
Host:	Officer in Charge of Construction Naval Facilities Engineering Command Minister of Health, Republic of the Philippines Minister of Health, Indonesia
Area Coordinator:	Commander, U.S. Naval Base, Subic Bay, Republic of the Philippines

COMMAND COMPOSITION

Administrative Organization

Office of the Commanding Officer
Office of the Scientific Director
Administrative Officer

Administrative Services
- Administrative Office
- Finance and Supply Department

Scientific Organization

Medical Ecology Department
- Entomology Division
- Mammalogy Division
- Parasitology Division

Tropical Medicine Department
- Clinical Investigation Division
- Epidemiology Division

Immunology & Biochemistry Department
- Immunology Division
- Biochemistry Division
- Radio Biology Division

Microbiology Department
- Serology Division
- Bacteriology Division
- Tissue Culture Division
- Chlamydia Division

Pathology Department
- Chemistry Division
- Hematology Division
- Histology Division

Veterinary Medicine Department
- Laboratory Animal Division

Virology Department
- Tissue Culture Division
- Virology Division

MILITARY STRENGTHS AS OF 12-31-83

OFFICERS

	Medical	Medical Service	Air Force
Captain - 06		1	
Commander - 05	1	1	1
LT Commander - 04	3	1	
Lieutenant - 03	1	6	
LT Junior Grade - 02			
TOTAL	5	9	1

5 Medical Corps
9 Medical Service Corps
1 Air Force
15 TOTAL OFFICERS

ENLISTED PERSONNEL (Hospital Corps)

E8	1
E7	5
E6	6
E5	1
TOTAL	13

CIVILIAN STRENGTH AS OF 12-31-83
BY GRADE LEVEL

GRADE		FULL TIME/PART TIME	
GS-15		1	
GS-12		1	
	TOTAL	2	2
FSN-18		3	
FSN-15		1	
FSN-14		3	
FSN-13		6	
FSN-12		16	
FSN-11		6	
FSN-10		1	
FSN-9		2	
FSN-8		5	
FSN-7		1	
	TOTAL	44	2

PART II

JAKARTA DETACHMENT

HISTORY OF NAMRU-2 DETACHMENT

NAMRU-2's origin in Indonesia traces back to 1963 when a small group of investigators carried out studies on arbovirus diseases in Indonesia. In 1968, an outbreak of Bubonic plague in Central Java prompted local authorities to request assistance from the American Ambassador to Indonesia. NAMRU-2 was asked to bring in its' resources and capabilities to complement those of a U.S. Public Health Service team. The outbreak was quickly brought under control, and in the interest of establishing prolonged control and long term surveillance in the area, the Commanding Officer of NAMRU-2 offered assistance for inter-epidemic zoonotic studies to commence with the phasing of the eradication team.

During the following four and one-half months, three teams from NAMRU-2 Taipei, consisting of five to seven scientists and technicians, operated a plague research center in Boyolali. The laboratory was relocated in the regency magistrate's office and living quarters were in a renovated warehouse. In addition to trapping over 8,000 rats, combing fleas, and making isolations in laboratory animals, the teams collected several hundred blood specimens from inhabitants of the area. In mid September 1968, the plague surveillance program was transferred to Indonesian Ministry of Health technicians who had trained with the NAMRU-2 team. The entire laboratory was airlifted from Semarang to Jakarta and installed in a temporary laboratory provided by the Ministry of Health.

Following the success of this project, Indonesian health authorities requested that NAMRU-2 establish a permanent research laboratory in Indonesia. Early negotiations with various authorities resulted in permission to establish a temporary laboratory in Jakarta. While negotiations continued to establish a permanent detachment, NAMRU-2 investigators were busy conducting various studies. These included: detection of leptospirosis in South Sumatra, serological examinations and hemoglobin determinations of samples collected in Bali and Makassar, and zoonotic and filariasis and biomedical surveys in Sulawesi.

Following prolonged negotiations, the permanent detachment agreement was signed on 16 January 1970, with His Excellency, the Minister of Health, Professor G. Siwabessy signing for the Republic of Indonesia and Ambassador Francis Galbraith for the United States.

In its formative years, the detachment was able to mount a forbidable and continuing zoonosis project resulting in the accumulation of considerable data on mammalian fauna and diseases. Other studies conducted were: dengue fever in Jakarta, mosquito ecology, and virus isolation and mapping of filariasis in Indonesia.

Recent studies at the Detachment have covered such diverse areas as filariasis, dengue, enteric fever and diarrheal diseases, influenza, arboviruses, gonorrhea and malaria. A five (5) year working plan which documents joint research efforts and responsibilities was finalized recently in Jakarta. The purpose of this document is to provide the frame work for collaborative work through mid 1980's with the overall objectives being manpower development (training), instructional building and research and surveillance of infectious diseases.

MISSION AND FUNCTIONS

a. Mission. To conduct research and development on infectious diseases of military importance that are endemic or epidemic in its assigned geographical area, and to perform such other functions or tasks as may be directed by the Commander, Naval Medical Command.

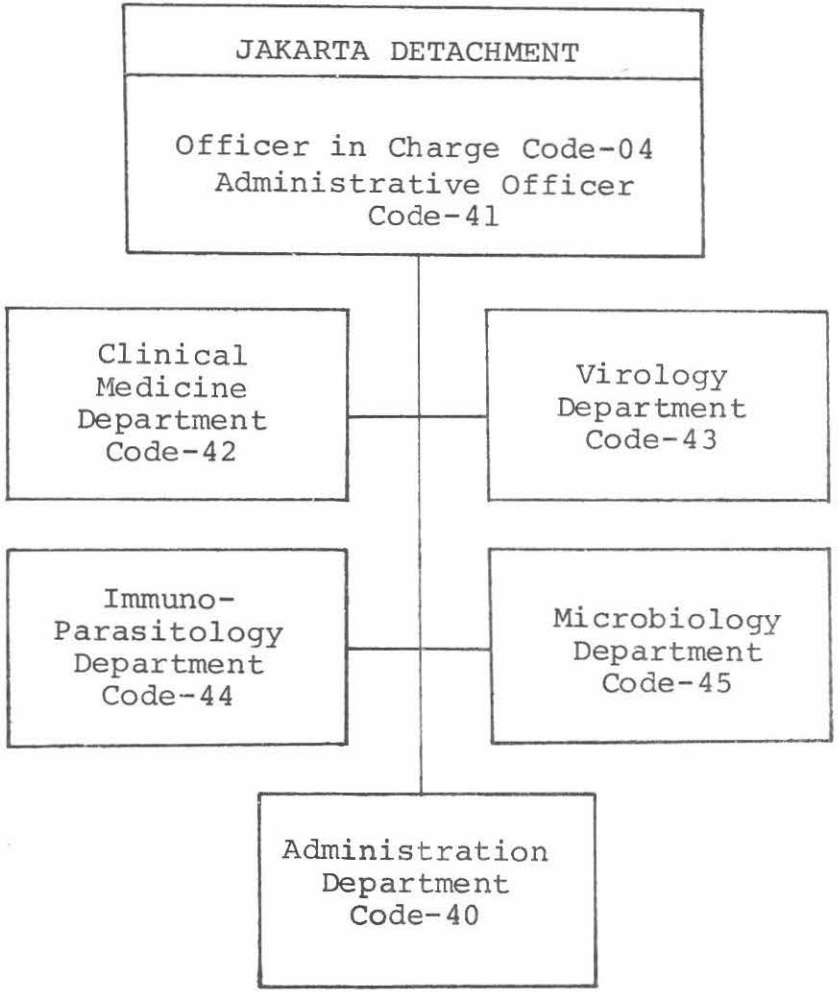
b. Functions. The functions of the Detachment are to:

(1) Conduct research on the ecology, etiology, epidemiology and immunology of infectious diseases prevalent in the Far East.

(2) Develop, test and evaluate methods for the diagnosis, treatment, prevention and control of infectious diseases prevalent in the Far East.

(3) Serve as an effective instrument of the U.S. Foreign Policy by initiating and continuing action programs which promote positive relations between the command and foreign nationals, and which assist individual Naval personnel and their families to work effectively, live with dignity and satisfaction, and function as positive representatives of the Navy and of the United States while overseas.

(4) Provide or undertake such other appropriate functions as may be authorized or directed by higher authority.


JAKARTA DETACHMENT
Officer in Charge Code-04
Administrative Officer
Code-41
Clinical
Medicine
Department
Code-42
Virology
Department
Code-43
Immuno-
Parasitology
Department
Code-44
Microbiology
Department
Code-45
Administration
Department
Code-40

PART III

ACTIVITIES AND PROGRESS

OF

SCIENTIFIC PROGRAM CENTERS

VIROLOGY DEPARTMENT, BUREAU OF RESEARCH AND LABORATORIES

TROPICAL MEDICINE DEPARTMENT

Studies on the epidemiology of malaria and drug resistant malaria in the Republic of the Philippines have continued. Clinical and epidemiologic data from over 1,500 patients with malaria at San Lazaro Hospital have been collected. Results from the first 1,000 cases were published this year in the American Journal of Tropical Medicine and Hygiene.

Drug Resistant Strains

During 1983, an important phase of work began on drug resistant P. falciparum malaria, clinical trials with newer anti-malarials were used. After one and a half years of effort, plans were finalized for a World Health Organization, San Lazaro Hospital, and NAMRU-2 collaborative clinical trial. An open randomized therapeutic trial of mefloquine & fansidar vs. mefloquine alone vs. fansidar alone has been instituted with 51 of 90 patients studied since April 1983.

Collaboration has continued with the Department of Immunology and Biochemistry on correlating the findings of in vitro microtest data on anti-malarial drug sensitivity with in vivo data. The clinical trial of mefloquine will allow NAMRU to correlate in vitro and in vivo data on mefloquine for the first time in the Philippines.

Collaboration with the Department of Microbiology's study of enteric fever lead to a poster presentation at the 1983 American Society of Tropical Medicine and Hygiene on the diagnostic value of a single widal test in typhoid fever.

Collaborative efforts with the Microbiology Department led to a study of the etiology of acute pneumonia; with the Virology Department, a study was began on the clinical and epidemiologic aspects of dengue and dengue hemorrhagic fever, and collaboration with the Immunology and Biochemistry Departments resulted in the commencement of a study on diagnostic, clinical and pathophysiological aspects of Schistosomiasis.

VIROLOGY DEPARTMENT

The virology program was significantly expanded during 1983 with the major research emphasis directed toward the study of arboviral diseases. A major achievement in this regard was the establishment of a tissue culture laboratory with over 12 vertebrate and invertebrate cell lines being maintained for viral assay systems.

A collaborative sero survey started in 1982 with the Philippine Ministry of Health, Bureau of Research and Laboratories was completed. Over 7,000 adults from throughout the Philippines were tested for antibodies against dengue, Japanese encephalitis and Chikungunya viruses.

A hospital based surveillance study to diagnose dengue infections occurring in Manila was initiated in May at San Lazaro Hospital, the

infectious disease hospital for the Philippines. This study was conducted in collaboration with the NAMRU-2 Department of Tropical Medicine, and involved the collection of clinical data and laboratory diagnosis by serology or virus isolation. This study has resulted in the diagnosis of over 300 hospitalized cases of dengue fever and dengue hemorrhagic fever. Over 70 strains of dengue virus have been isolated with all four serotypes being represented. Rapid typing of the dengue isolates has been accomplished by the indirect fluorescent antibody test using specific monoclonal antibodies to each serotype. In addition, serodiagnosis of dengue virus infections was provided as a service to a number of other hospitals located in Manila, the U.S. military hospitals at Clark Air Force Base and Subic Naval Base and the medical dispensary at the U.S. Embassy in Manila.

Studies to determine the clinical significance of Japanese encephalitis virus also were initiated. Although this virus has been known to be present in the Philippines for 20 years, its role as an etiological agent of encephalitis has not been well defined. To accomplish rapid diagnosis of JE virus infection in cases of encephalitis, an IgM antibody capture ELISA was set up to detect early virus-specific antibody in CSF. Using this technique, several cases of Japanese encephalitis have been diagnosed in patients referred from Manila hospitals.

Ecological studies on JE virus have continued in collaboration with the Entomology Section of the Medical Ecology Department at NAMRU-2, and have involved the periodic testing of sentinel pigs for antibody and the processing of pools of field collected mosquitoes for virus isolation.

Presentations by members of the Virology Department in 1983:

Presentations made by Dr. Hayes:

1. University of Santo Tomas Hospital, Manila: Dengue Fever and Dengue Hemorrhagic Fever.

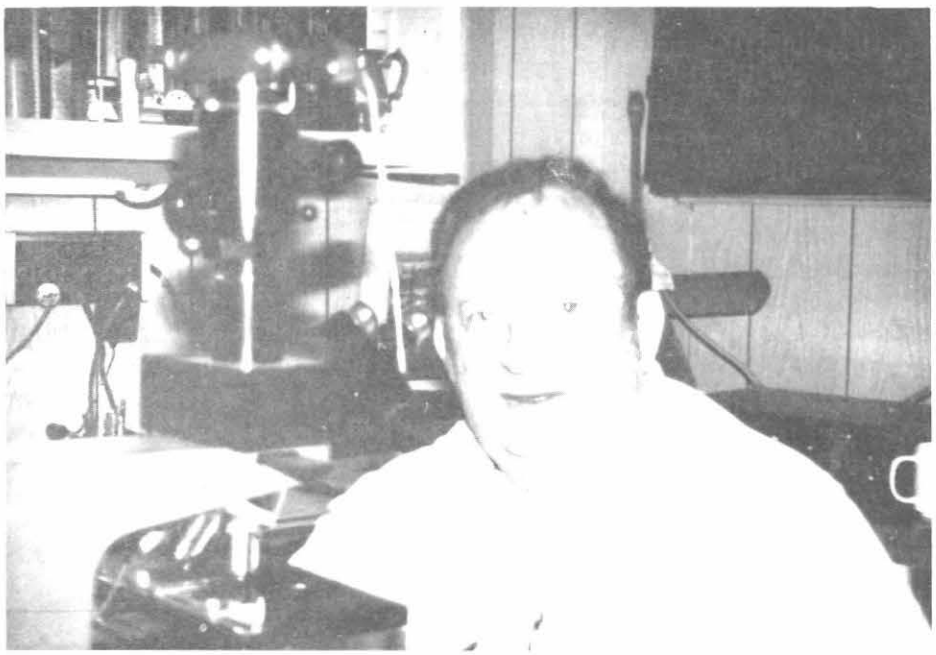
2. U.S. Military Medical Research Laboratories of S.E. Asia Workshop; Baguio: Arbovirus in the Philippines.

3. Fabella Memorial Hospital; Manila: Viral Hepatitis.

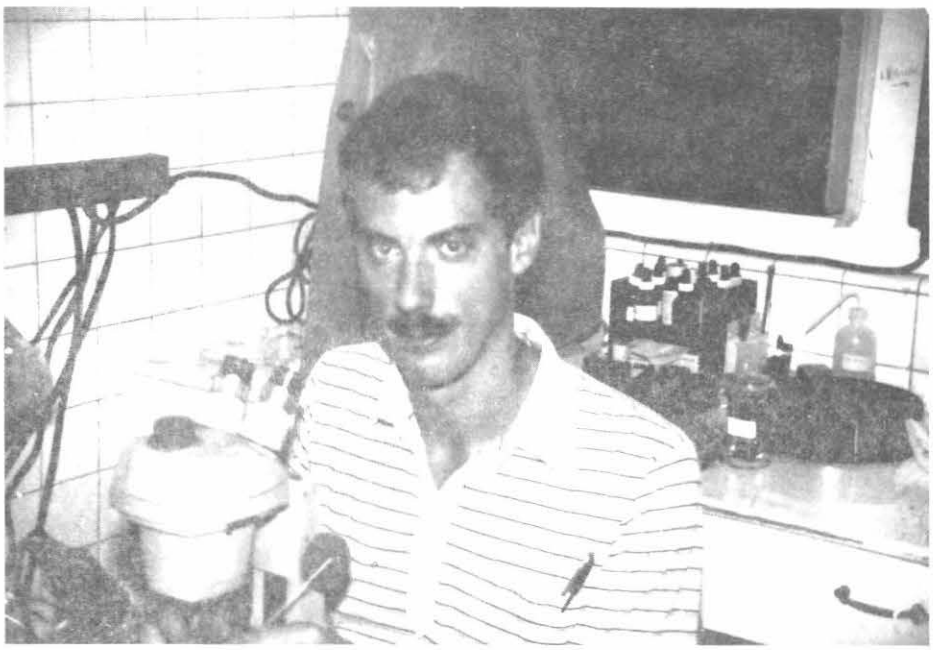
4. Subic Naval Station and Clark Air Force Base Hospitals: Arbovirus of Public Health Importance in the Philippines.

5. Army-Navy Overseas Laboratory Strategy Planning Conference; Bethesda: Arbovirus Research at NAMRU-2.

Dr. Hayes also attended the International Conference on Dengue and Dengue Hemorrhagic Fever held in Kuala Lumpur in September and the Annual Meeting of the American Society of Tropical Medicine and Hygiene in December in San Antonio. In addition, Dr. Hayes visited the NAMRU-2 Detachment in Jakarta, the U.S. Army (AFRIMS) Laboratory in Bangkok, the Walter Reed Army Institute of Research in Washington, D.C. and the U.S. Army Research Institute of Infectious Diseases, Fort Detrick in 1983.



DR. JOHN H. CROSS, SCIENTIFIC DIRECTOR



LT MARK T. WOOSTER, MSC, USN

MEDICAL ECOLOGY DEPARTMENT

The Medical Ecology Department has 3 divisions: entomology, mammalogy, and parasitology; research objectives are to carry out biomedical studies on infectious diseases, their vectors and reservoir hosts in the Philippines.

In the division of entomology, emphasis is on the bionomics and disease transmission potential of medically important Philippine arthropods. Field trips have been made to Central and Northern Luzon and Palawan to collect mosquitoes for colonization, taxonomic and susceptibility studies. Numerous attempts have been made to colonize Anopheles flavirostris, Anopheles litoralis and Anopheles balabacensis but development was only attained up through the F_2 generation. On the other hand, several Aedes species, Toxorhynchites amboenensis and Anopheles maculatus have been established in colony. Collaborative studies on the vectors of arboviral diseases and malaria are also underway with the Virology and Immunology and Biochemistry Departments, the Preventive Medicine Section, Naval Regional Medical Center, Subic Bay and Biomedical Engineering Division, U.S. Airforce Regional Medical Center at Clark Air Base.

The major effort in the mammalogy division, at present, is the collection of Rattus sp. in association with studies on Hantaan virus in the Philippines. Rats have been trapped and sera tested for antibodies to the virus. Serologic evidences thus far suggests that the virus is endemic to the Philippines. Rat lungs are now being frozen and sent to the U.S. Army Medical Research Institute for Infectious Diseases at Ft. Dietrict, Maryland for virus isolation. Rat skins, are being preserved and sent to the Museum of Natural History, New York for species identification.

The major effort of the parasitology division is the study of parasitic and zoonotic diseases of military importance in the Philippines. Biomedical surveys are conducted throughout the islands in which stools, venous bloods and blood smears are obtained and examined for parasitic as well as other infectious diseases. The major diseases included in the surveys are amebiasis, filariasis, malaria, schistosomiasis and intestinal parasitosis. A recent survey on Palawan uncovered a new focus of bancroftian filariasis, an area in Central Luzon presented a high seropositivity rate for amebiasis and an epidemic of intestinal capillariasis was investigated in southern Leyte. A number of serologic tests are now being carried out for evidence of amebiasis, filariasis, malaria, schistosomiasis, giardiasis, toxocariasis, cysticercosis, angiostrongyliasis, scrub and murine typhus and legionellosis.

Colonies of several subspecies of Oncomelania hupensis along with respective geographic strains of Schistosoma japonicum have been established in the laboratory and studies are planned to determine differences between the Taiwan, non-human strain of the parasite and pathogenic strains from the Philippines, China and Japan. Studies are also underway in collaboration with the Tropical Medicine Department and Immunology and Biochemistry Departments on the pathophysiology of oriental schistosomiasis.

Another project in collaboration with the Immunology and Biochemistry Department is the development of monoclonal antibodies to use in the diagnosis of amebiasis and schistosomiasis. These efforts are just starting.

Presentations

Lectures presented at three universities in Taiwan; at the Institute for Medical Research, Kuala Lumpur; The Faculty of Tropical Medicine, Mahidol University and the Thailand Society of Tropical Medicine, External examiner at Mahidol University, Bangkok. Paper presented at the Tropical Medicine Meeting, Seoul, Korea and Lectures presented at the University of the Philippines Medical College; at the U.S. Naval Hospital, Subic Bay, and the U.S. Air Force Hospital, Clark Air Base.

IMMUNOLOGY AND BIOCHEMISTRY

One of the primary functions of this department is the in vitro cultivation of Plasmodium falciparum. The work can be summarized as follows:

a) In vitro assay of drug resistance to P. falciparum: This project is being carried out in collaboration with the Department of Tropical Medicine. Currently, in vitro results to in vivo findings with mefloquine are being compared. In addition, screens for sensitivity/resistance to chloroquine, amodiaquine and quinine are being carried out.

b) Adapt Philippine strains of P. falciparum to continuous culture: Over the past year, attempts have been made to adapt over 130 isolates of P. falciparum to macroculture using numerous suggested variations without success. A collaborative program with Dr. Kyle Webster, AFRIMS, Bangkok, Thailand was begun. Collection and preservation of specimens for shipment to AFRIMS to aid in their study of antigenic diversity among different strains will be accomplished. In exchange, AFRIMS will attempt to adapt some of the Philippine strains to continuous culture.

c) Field studies: One of our mission is to identify field sites for future vaccine testing and for future malaria research. Malaria surveys were performed in Palawan and at marine training areas near Subic Bay and at Dingalan Bay, both on Luzon.

d) Dr. Nunilon Sy of the department has recently completed a study comparing HLA types in P. falciparum infected versus control individuals. A lower incidence of B27 in the P. falciparum group (0%) as compared to the uninfected population (10%) and P. vivax infected population (11%) was found. A manuscript has been submitted to the Southeast Asian Journal of Tropical Medicine and Public Health.

Studies on Schistosoma Japonicum

a) Diagnosis. A study has been initiated in collaboration with the San Lazaro Hospital, evaluating the S. japonicum egg antigen ELISA as a diagnostic tool. The ELISA is being compared to the COPT serologic assay as well as to stool examination techniques. If necessary, rectal biopsies are performed to confirm diagnosis by Dr. George Watt.

b) Pathology. A study is being carried out in collaboration with Dr. Watt, San Lazaro Hospital, and the NAMRU-2 clinical laboratory on the pathology of Schistosomiasis Japonica. Our study is focusing on liver and kidney pathology.

Hepatitis

a) Dr. Sy has recently completed a study in collaboration with Jose Fabella Hospital on HBs antigen prevalence. A study is currently underway with that hospital and Regional Medical Center, Clark AFB, studying mother to child transition of hepatitis B.

PATHOLOGY DEPARTMENT

The mission of the Pathology Department is two-fold: (1) to provide service to other investigators at NAMRU-2 and (2) to carry out studies on the pathogenesis of infectious diseases in the Philippines.

The Pathology Department has laboratories in clinical chemistry, hematology and histology. It is to provide service to investigators carrying out studies at San Lazaro Hospital and to those undertaking experimental infections on animals. Various clinical tests will be done in hematology and chemistry, autopsies will be performed, tissues processed and examined for pathologic processes (should be under the supervision of a board of Certified Pathologists).

VETERINARY MEDICINE DEPARTMENT

The mission of the Veterinary Medicine Department is to provide an adequate supply of healthy laboratory animals to be used by NAMRU-2 investigators and their collaborators.

Various animals, mice, rats, hamsters, gerbils, rabbits, guinea pigs, monkeys and other animals as requested will be raised in the vivarium or obtained from other sources. They will be used for experimental purposes and maintained under sanitary and safe conditions, and made available to NAMRU-2 projects. The department will also collaborate with other investigators on the study of zoonotic diseases in the Philippines (should be under the supervision of a Veterinarian with boards or training in laboratory animal medicine).

MICROBIOLOGY DEPARTMENT, SAN LAZARO HOSPITAL

MICROBIOLOGY DEPARTMENT

During 1983, the Microbiology Department continued its on-going studies into the prevalence and distribution of etiologic agents of diarrheal disease in the Philippines. In addition to the major focus on enteric diseases, the department carried out numerous side studies of such infectious diseases as typhoid fever, acute respiratory infections, and etiologic agents of meningitis, as well as providing clinical bacteriologic support for various hospitals in the Manila area.

The department has recently received funding and space to build a chlamydiology laboratory in San Lazaro Hospital and will begin a full-scale study of this disease, in conjunction with the Navy and Air Force hospitals at Subic Bay and Clark Air Force Base. This study is scheduled to begin in 1984.

Present plans are to expand the department to include a Biotechnology Branch with emphasis on rapid diagnostic techniques for the detection of etiologic agents of enteric infection. A second full-time microbiologist will be hired to head this branch, probably in 1984/85, and when completed, it should provide an excellent complement to the present enteric disease research program.

FISCAL DEPARTMENT

a) Whereas in prior years NAMRU-2 had received 100% of its funding from the Navy, in FY 83 it began to receive all of its work unit dollars from the Army. For the Accounting Department, this switch entailed maintenance of ledgers not previously kept, and preparation and submission of additional financial reports. The NAMRU-2 accounting staff was able to assimilate these additional duties and responsibilities into their normal routine without any major disruption of existing operations.

b) A 1 Oct 1982 fire in the building, which formerly housed NAMRU-2's administrative spaces, occurred during the Accounting Department's busiest period. In spite of the many inconveniences suffered by all, i.e. extremely poor lighting conditions, the accounting staff continued to meet all reporting deadlines.

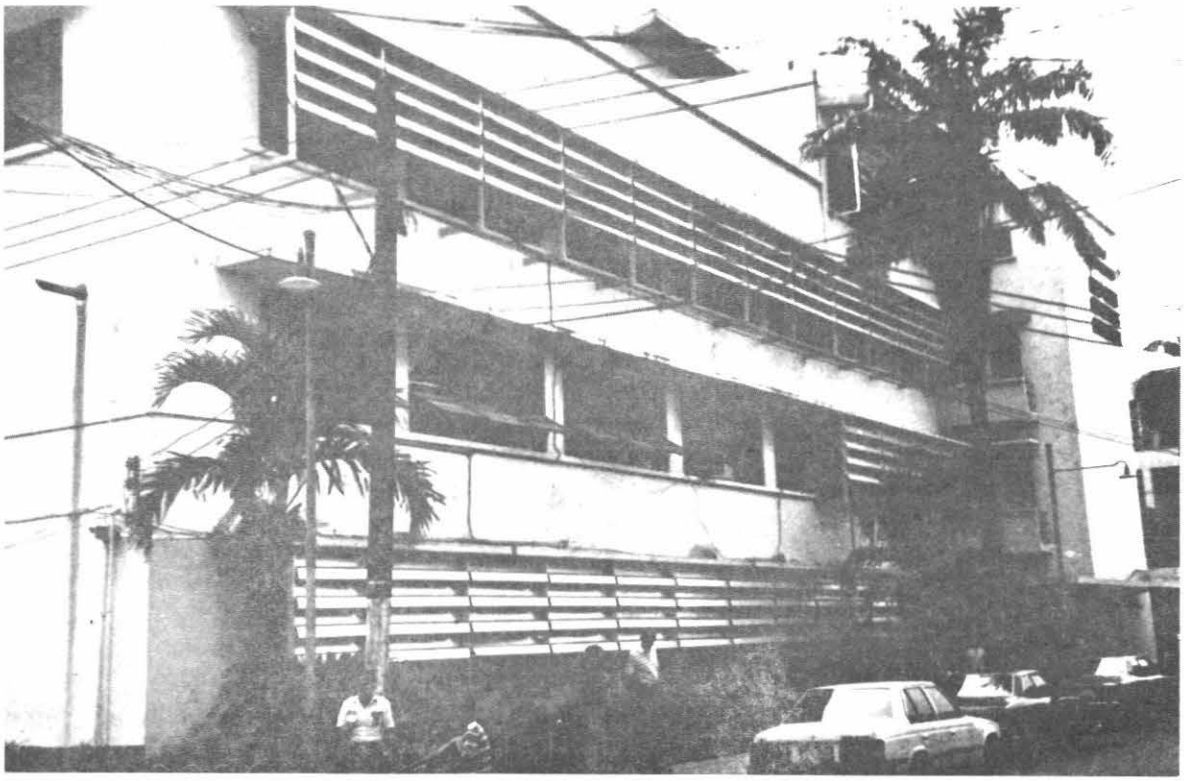
c) During FY 83, a triennial plant account property inventory was conducted at NAMRU-2. Upon completion of the inventory, the Accounting Department staff was tasked with the reconciliation of the plant account records.

d) Personnel changes during FY 83: None.

SUPPLY DEPARTMENT

a) During FY 83, the duties of the Unit's Property Chief were consolidated with the duties and responsibilities of the Supply Chief, making available an additional hand for the laboratory.

SAN LAZARO HOSPITAL



BUREAU OF RESEARCH AND LABORATORIES

b) Mr. Antonio Del Carmen of the Supply Department attended and successfully completed the "Defense Small Purchase Course" at NSD, Subic Bay. Upon completion of the course, Mr. Del Carmen's position was reclassified from FSN-10, Supply Clerk to FSN-12, Supply Specialist.

c) The Supply Chief conducted the Unit's triennial plant account and minor property inventory during FY 83. After the property records were reconciled, it was determined that $209K of gear could no longer be accounted for.

d) A 1 Oct 1982 fire in the building, which formerly housed NAMRU-2's administrative spaces, threatened to hinder Supply Department operations. Through a little extra effort by the Supply Department staff, department operations were sustained at normal levels.

e) Personnel changes during FY 83: Ms. Josefina Alejandro, FSN 9, Clerk Typist, resigned, replaced by Ms. Teresita Simplicio.

SAN LAZARO HOSPITAL

Founded as dispensary in Intramuros by Fray Juan Clemente in 1577. It became a hospital in 1578. It was taken over by the Hermandad de la Misericordia in 1596 and transferred to the new building at the premises of the Philippine Normal College becoming the San Lazaro Hospital in 1631. It was turned over to the Hermanos de San Juan de Dios on May 13, 1656. The building was demolished for the protection of the City against the invasion of Chinese pirates in 1662. It transferred to another building nearby which was constructed by Fray Fernando de la Concepcion in 1675. It moved to a building on the present compound in 1784. Was enlarged in 1785 and further improved by Fray Felix de Huerta who built a chapel and enclosed the premises with a stone wall in 1859. It was taken over by the Americans in 1898 and it became a Contagious Disease Hospital. Today, it remains as a contagious disease hospital.

NAMRU-2 became affiliated with the hospital in 1960's working with hospital physicians on the treatment of cholera. Studies were done on other diseases, dengue hemorrhagic fever and intestinal capillariasis in 1967 onward and the entire unit moved to the Philippines in April 1979 and expanded activities at the hospital.

NAMRU-2 has established a bacteriology laboratory as well as a clinical laboratory within the main building of the hospital and carries out clinical investigations in collaboration with the staff of the hospital in a variety of infectious diseases, (malaria, dengue, schistosomiasis).

BUREAU OF RESEARCH AND LABORATORIES

The Bureau of Research and Laboratories can be traced back to the incorporation of a Division of Laboratories to the organizational set-up of the Department of Health on November 3, 1947, which reorganized the entire government of the Republic of the Philippines little over a year after its inauguration on July 4, 1946.

MEDICAL LIBRARY, SAN LAZARO HOSPITAL COMPOUND

MEDICAL LIBRARIAN

In 1950, this Division of Laboratories was converted into an office with the rights and prerogatives of a Bureau, directly under the Office of the Secretary of Health and was called the Public Health Research Laboratories on 16 March 1959, at which time the present organization was created.

The mission of the Bureau of Research Laboratories is to be able to contribute to the realization of the ultimate goal of the Department of Health to raise the level of health of the general population by placing an emphasis on preventive and curative aspects of health care delivery.

NAMRU-2 Departments at the Bureau of Research and Laboratories include Medical Ecology, Tropical Medicine, Virology, Microbiology, Immunology and Biochemistry and Pathology.

A twenty-five year lease agreement between the Republic of the Philippines represented by the Minister of Health, Dr. Jesus C. Azurin and the United States of America represented by the Commanding Officer of NAMRU-2, Captain William H. Schroeder was entered into on 1 March 1982 for facilities occupied by the NAMRU-2 staff at San Lazaro Hospital and the Bureau of Research and Laboratories. The lease will expire 1 March 2007, unless sooner terminated by either party. The annual cost of the lease is 100 centavos.

NAMRU-2 MEDICAL LIBRARY

The NAMRU-2 Medical Library Building, which was formally inaugurated on January 16, 1984 and officially turned over to NAMRU by the Officer in Charge of Construction on 10 April 1984, is located at the San Lazaro Hospital compound, Sta. Cruz, Manila, Philippines.

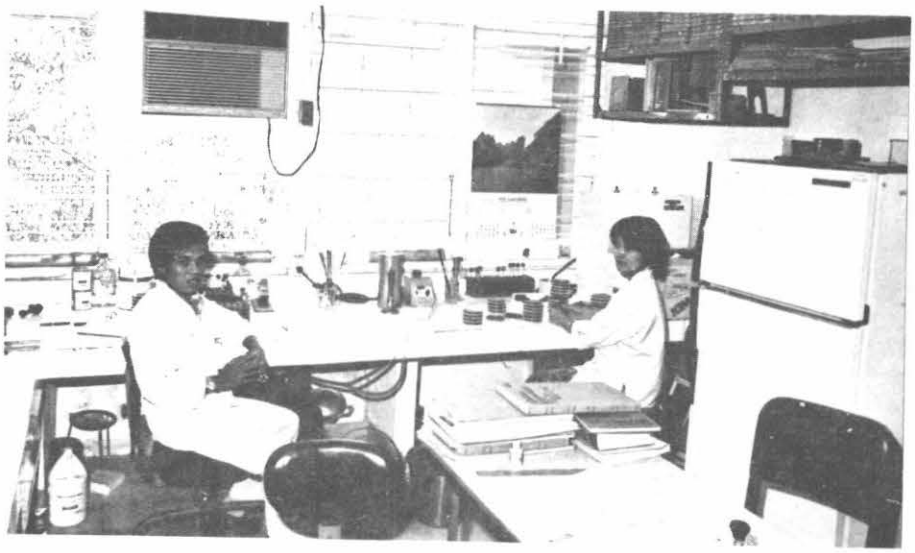
It houses the Medical Library, which is a special collection of books, journals and other library materials designed to provide information or aid the NAMRU-2 staff in their scholarly research regarding Tropical and Communicable Diseases.

It has an estimated collection of more than 15,000 volumes of books and approximately 200 titles of journals, both foreign and local. Most of these journals date from as far back as 1956, when NAMRU-2 was established in Taipei, Taiwan, and some as far back as 1920. In addition to the books and journals which deal with Tropical and Communicable Diseases, an interesting collection of materials regarding General Medicine and Statistics is also maintained.

Other services offered by the Library include the Inter-Library Loan with Stitt Library, Bethesda Naval Hospital and the National Library of Medicine, in Bethesda, Maryland. Photocopies of requested reference articles that cannot be found among the collection, but are available in local libraries such as the World Health Organization (WHO) Library, University of the Philippines Libraries (Main Library, College of Medicine, Institute of Public Health College of Agriculture in Los Banos), Clark Regional Medical Center Library and Subic Naval Hospital Library, can be acquired upon demand. For bibliographical searching, the Library can utilize the MEDLINE search through Tripler Army Medical Center in Hawaii.

PART IV

ACTIVITIES AND PROGRESS OF SCIENTIFIC CENTERS OF THE JAKARTA INDONESIA DETACHMENT



NAMRU-2 DETACHMENT HEADQUARTERS, JAKARTA, INDONESIA

CLINICAL INVESTIGATION & EPIDEMIOLOGY DEPARTMENT

Malaria:

a. IRIAN JAYA. Established NAMRU's first 2 study sights in Irian Jaya. Established the optimal method of performing the micro in vitro test for chloroquine resistance in Jayapura and documented the level of in vivo and in vitro chloroquine resistance in Jayapura (one publication, one presentation). Completed randomized study comparing sulfadoxine pyrimethamine to the combination of mefloquine and sulfadoxine pyrimethamine in Jayapura (75 patients) and showed that there was 5% resistance to both. Completed, study of the in vitro sensitivity of P. falciparum to mefloquine and quinine in Jayapura; 15% of isolates resistant to mefloquine and 35% to quinine (2 presentations). Initiated a double blind study of high dose dexamethasone in quinine treated patients with cerebral malaria and a study of risk factors for developing severe malarial disease (have now included 76 patients with cerebral malaria in these studies). Initiated studies of macrophage mediators, arachidonic acid metabolites, and endotoxin in the pathogenesis of severe malaria (preliminary findings indicate that endotoxin is present). Conducted initial censusing and survey of the field study sight in Mapurajaya to be used for epidemiology studies and hopefully for future vaccine trials.

b. FLORES. Completed field work for epidemiological description of malaria in Flores (3 year study). Completed basic epidemiological description of tropical splenomegaly syndrome (TSS) in Flores (one presentation). Showed that there was a reduction in T suppressor cells in TSS in Flores (one presentation, one publication). Showed that lymphocytotoxic antibodies were present in the sera of patients with TSS (2 presentations). Showed that chloroquine could still be used for treating villagers from Flores with chloroquine resistant P. falciparum (one presentation, one publication). Showed that the immune response to filariasis was modulated by the presence of TSS (one publication). Showed that the newly described visual in vitro test for malaria drug resistance was of no value. This was later confirmed by WHO.

Typhoid Fever. After proving in 1982 that dexamethasone reduced mortality in severe typhoid fever (one publication, 1984), established that this form of therapy could be practically used in the hospital. Made initial findings suggesting that the pathogenesis of typhoid was related to an increase in arachidonic acid metabolites and to endotoxin. Established that the bone marrow aspirate culture was better than the string capsule culture for diagnosing typhoid fever (one publication, 1984). Established that the Widal test was more useful that the new ELISA test and the urine coagglutination test for rapidly diagnosing typhoid fever. In collaboration with Indonesian colleagues wrote 2 proposals to WHO (both funded), one for longitudinal field epidemiology studies of typhoid designed to find a vaccine study site and a second to prepare a study site in Sumatra for a typhoid vaccine trial.

Dengue Hemorrhagic Fever. Made the first clinical description of DHF in infants in Indonesia (8 cases) and made preliminary findings indicating that the sera from the mothers of these infants had enhancing antibodies (one presentation). Developed plans for a regional (Manila, Bangkok, Jakarta) study of the pathogenesis and clinical presentation of DHF.

Cholera. Initiated a trial comparing bicarbonate based ORS to citrate based ORS for rehydrating hospitalized cholera patients.

Filariasis. Completed a 3 year study of the incidence and prevalence of microfilaremia and clinical symptoms and signs of filariasis in Flores, Indonesia. Made initial observations that the immune response to filariasis in Flores was not the same as has been described in other parts of the world; in Flores there is no correlation between microfilaremia and antisheath antibodies (one presentation, one publication).

PRESENTATIONS AND PUBLICATIONS

Presentations.

1. Washington, D.C., April 29 - 2 May 1983. Association of American Physicians/American Society for Clinical Investigation/American Federation for Clinical Research National Meeting.

2. Jakarta, Indonesia, 2-6 May 1983. Meeting of Principal Investigators of the Regional Collaborative Studies on Drug Resistant Malaria, World Health Organization, Regional Office for Southeast Asia.

3. Bandung, West Java, Indonesia, 29-31 August 1983. The Third National Seminar on Parasitology.

4. Kuala Lumpur, Malaysia, 1-3 September 1983. International Conference on Dengue/Dengue Haemorrhagic Fever at University of Malaya.

5. San Antonio, Texas, November 1983. American Society Tropical Medicine Hygiene Meeting.

Publications.

1. Smrkovski, LL, Hoffman, SL, Purnomo, Hussein RP, Masbar S and Kurniawan L. Chloroquine resistant Plasmodium falciparum on the island of Flores, Indonesia. Trans. R. Soc. Trop. Med. Hyg., 77(4): 459-462, 1983.

2. Piessens WF, Hoffman SL, Ratiwayanto S, Piessens PW, Partono F, Kurniawan L and Marwoto HA. Opposing effects of filariasis and chronic malaria on immunoregulatory T lymphocytes. Diagnosis Immunology, 1: 157-260, 1983.

3. Hoffman SL, Punjabi NH, Kumala S, Moechtar MA, Pulungsih SP, Rifayati A, Rockhill RC, Woodward TE and Loedin AA. Reduction of mortality in chloramphenicol-treated severe typhoid fever by high dose dexamethasone. Clinical Research, 31(2): 541A, 1983. (abstract)

4. Piessens WF, Hoffman SL, Ratiwayanto S, Kurniawan L, Marwoto Ha. Suppressor T lymphocytes are decreased in Tropical Splenomegaly Syndrome (TSS). Clinical Research 31(2): 493A, 1983. (abstract)

5. Hoffman SL, Piessens WF, Hussein RP, Marwoto H and Converse JD. Tropical splenomegaly syndrome in Flores, Indonesia: Epidemiologic, clinical, and laboratory observations. Am. J. Trop. Med. Hyg. (abstract)

6. Lee VH, Hoffman SL, Soeroto A, Hussein RP, Rusmiarto S and Marwoto HA. The vectorial capacity and entomologic innoculation rate of Anopheles subpictus, the principal malaria vector in Flores, Indonesia. Am. J. Trop. Med. Hyg. (abstract)

7. Campbell JR, Hoffman SL, Harun S, Dimpudus AJ, Marwoto HA, Kumara Rai N, Hadidjaja P and Laughlin LW. In vitro studies of the sensitivity of Plasmodium falciparum to mefloquine in Indonesia. Am. J. Trop. Med. Hyg. (abstract)

8. Flanigan TP, Hoffman SL, Punjabi NH, Leksana B, Soetomo A, Sri Pandam, Yanas and Rockhill RC. An admission positive Widal test is a high diagnostic value for typhoid fever in Jakarta. Am. J. Trop. Med. Hyg. (abstract)

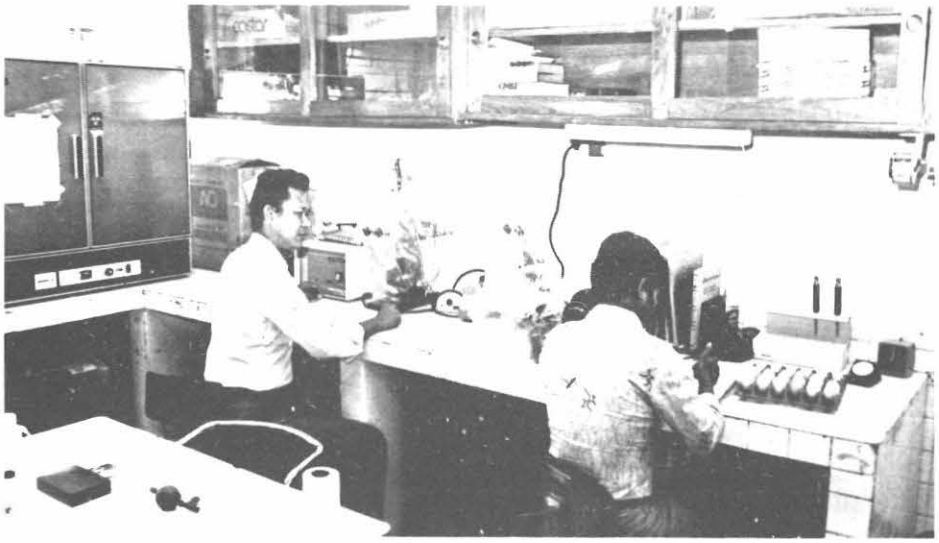
9. Piessens WF, Wadee AA, Hoffman SL, Ratiwayanto S, Hussien R, Kurniawan L, Marwoto HA and Campbell JR. Characterization of a lymphocytotoxin in sera from patients with tropical splenomegaly syndrome (TSS). Am. J. Trop. Med. Hyg. (abstract)

10. Hoffman, SL, Harun S, Dimpudus AJ and Marwoto HA. In vitro studies of the sensitivity of Plasmodium falciparum to mefloquine in Indonesia. Proceedings of The Third National Seminar on Parasitology, Bandung, West Java, Indonesia, 29-31 August 1983. (in press)

11. Marwoto HA, Hoffman SL, Dimpudus AJ, Sekar Tuti E and Susetyono. Malaria di Irian Jaya. Proceedings of the Third National Seminar on Parasitology, Bandung, West Java, Indonesia, 29-31 August 1983. (in press)

12. Harun S, Hoffman SL, Marwoto HA and Diet Rustama. Teknik in vitro (mikro) untuk menentukan sensitivitas Plasmodium falciparum terhadap obat anti-malaria. Proceedings of the Third National Seminar on Parasitology, Bandung, West Java, Indonesia, 29-31 August 1983. (in press)

13. Sumarmo, Hoffman SL, Burke DS, Converse JD and Punjabi NH. Clinical and virologic observation in 9 infants with dengue Haemorrhagic Fever, Jakarta, 1981. Proceedings of the International Conference on Dengue/ Dengue Haemorrhagic Fever at University of Malaya, Kuala Lumpur, Malaysia, 103 September 1983. (in press)




B-D
B-D

MICROBIOLOGY DEPARTMENT

Most of the microbiological research has centered on rapid diagnostic methods and their applications to military and developing country (including field) needs. The following developments are considered noteworthy.

a. A very specific and sensitive cholera coagglutination (COAG) set of reagents has been developed and a pilot study has determined that the reagents can detect cholera antigen or organisms in Amies transport medium used to transport rectal swabs for culture from cholera patients. A prospective evaluation of the cholera COAG reagents and associated test protocol is in progress.

b. A previous NAMRU-2 Detachment study and report (1980) established that a COAG test for S. typhi organisms or antigen in urine was an effective diagnostic tool in typhoid and paratyphoid fevers. It was found that the antisera used for the preparation of the COAG reagents was too low in titer to produce an effective reagent. Secondly, the autoagglutination of the COAG reagent and control cells in urine could be eliminated by treating the urine samples with Clelands reagent, a powerful sulfhydral group reducing agent. Limited reevaluation of the urine COAG procedure with new reagents and the urine treatment showed that the test is as sensitive and specific as previously reported. The new reagents and urine treatment are being reevaluated and validated in a current typhoid fever study.

c. The enrichment of a duodenal string capsule (DSC) culture followed by testing with S. typhi and S. paratyphi A specific COAG reagents were compared to bone marrow aspirate culture (BMA), blood culture in Oxgall (C), and rectal swab enrichment culture (RS) for the diagnosis of typhoid and paratyphoid fevers. The DSC was less sensitive than BMA, slightly more sensitive than BC, and more sensitive than RS enrichment. However, in the absence of BMA, the DSC along with BC and RS enrichment can improve diagnostic success to about 85%, equal to BMA.

d. The diagnostic usefulness of using COAG procedures in typhoid and paratyphoid fevers was established. Testing primary enrichments of patient specimens with appropriate COAG reagents can be substituted for standard cultural methods to provide results up to 48 hours sooner and the sensitivity is greater than the current standard culture-based techniques.

e. Lastly, the thyroid hormones thyroxine and triiodothyronine were shown to enhance the growth of S. typhi when they were incorporated in blood culture media inoculated with blood samples from typhoid fever patients. The reduced culture incubation time, combined with organism detection by COAG procedures, results in earlier reporting to the clinician.

All the above clinical support and research was conducted under less than ideal conditions for a majority of 1983. From January to June 1983, the Department had to be relocated from our Indonesian Ministry of Health supplied laboratory space (3 laboratories, media preparation room, and central sterilization and labware preparation area) to one small laboratory and two storage rooms at the Infectious Diseases Hospital in Jakarta, about 5 km. away, due to the replacement of our termite ridden roof. The clinical support and research workload was maintained at the temporary site but the working conditions were not ideal due to space, utilities, transportation, and environmental factors. July and August required another readjustment period because of the move back to our larger re-roofed laboratories. During all the above turmoil, the output and quality of results were maintained and quality control was excellent.

List of Publications and Presentations

Publications.

H. Hadiputranto, R.C. Rockhill, Sumarmo, and A. Sutomo. 1983. Tetracycline Resistant Campylobacter Fetus Subsp. Jejuni in Jakarta. MEDIKA 9:151-152.

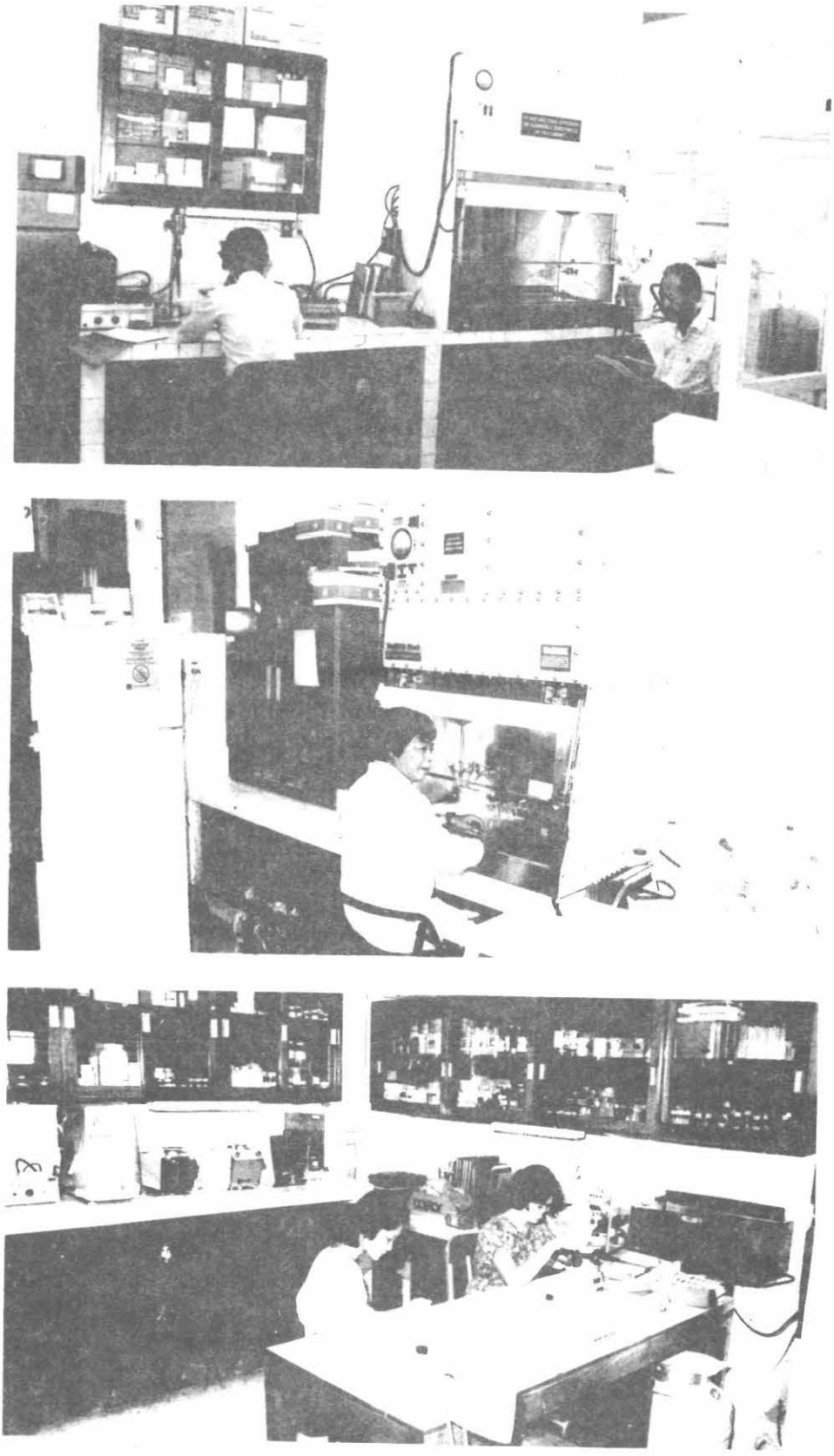
R.C. Rockhill, M. Lesmana, and A. Moechtar. 1983. Improved Method, using Beta-Hemolysin, for Detection of Hemolysin(s) Produced by Vibrio Cholerae Biotype E. Tor. Asian J. Trop. Med. Pub. Hlth. 14:181-185.

V. Burke, J. Robinson, J. Beaman, M. Gracey, M. Lesmana, R. Rockhill, P. Echeverria, and J.M. Janda. 1983. Correlation of Enterotoxicity with Biotype in Aeromonas spp. J. Clin. Microbiol. 18:1196-1200.

D.C. Edman and J.B. Brooks. 1983. Gas-liquid Chromatography-Frequency Pulse-Modulated Electron-Capture Detection in the Diagnosis of Infectious Diseases. J. Chromatogr. 274:1-25.

Presentations.

Oral Microbiology, 24 lecture hours. A course in basic and oral microbiology given to the Indonesian Navy Dental Institute Dental Residents, April through August 1983.



JAKARTA INDONESIA DETACHMENT LABORATORY

VIROLOGY DEPARTMENT

In 1983, the Virology Department activities included: 1) expanding the arbovirology program with increased emphasis on defining dengue infections and upgrading virological techniques, 2) continuing the myxovirus surveillance program and including paramyxovirus screening, 3) assisting host country agencies with laboratory support for their projects, 4) training host country virologists at both NAMRU-2 and their laboratories to expedite technology transfer and 5) participation in collaborative efforts between regional DOD medical research laboratories as set for the May 1983 Baguio Meeting. A host country counterpart of collaborator was involved in all activities involving specimen collections and patient contact while processing of clinical specimens and development of new virology capabilities were accomplished at the NAMRU-2 Jakarta laboratory. The major medical facilities and organizations with which collaboration took place during 1983 were: Sumber Waras Hospital, Jakarta (myxovirus and dengue studies); Primary Health Care Clinic Utan Kayu, Jakarta (myxovirus study); Department of Microbiology, Faculty of Medicine, University of Gadjah Mada, Yogyakarta (arbovirology and myxovirus studies and training); Panti Rapih and Dr. Sardjito Hospitals, Yogyakarta (arbovirology and myxovirus studies and training); Indonesian Centers for Disease Control and provincial health services (arbovirus surveillance and training); and, in conjunction with the Clinical Department, NAMRU-2, the Infectious Disease Hospital, Jakarta (arbovirology and enteric viruses) and University of Indonesia Hospital, Jakarta (arbovirology).

The arbovirology program resulted in the first recoveries of chikungunya viruses in Indonesia. These six isolates recovered over six months present a most interesting situation. Past introductions of chikungunya viruses into new populations resulted in explosive epidemics, while in our study population, the antibody prevalence to group A arboviruses was less than 3%, limited transmission was occurring over a six month period, and there was no outbreak. Chikungunya virus is of military importance and DOD is developing a vaccine to this virus. The dengue virus work demonstrated the continuing circulation of dengue viruses types 1, 2, and 3 on Java with dengue-3 recovered most frequently. The Virology Department collaborated in the Clinical Department study of viral enhancement by maternal antibodies and in the description of adult dengue cases in Jakarta. The routine surveillance program for arbovirus in mosquito populations was completed. This work resulted in the recovery of over 150 viral isolates with representatives from several viral groups. Definitive identification of these isolates is now underway at the Yale Arbovirus Unit.

Myxovirus-Paramyxoviruses were conspicuous by their absence since April 1983. This quiesent period follows several consecutive months of virus isolations and two closely spaced outbreaks of type A (H3N2) in September-October 1982 and January-February 1983. If the absence of influenza viruses is due to increased immune pressure in the Indonesian population, there may be an increased potential for the appearance of a new antigenic strain of influenza in this region.

Assistance to host country laboratories included development of a hemagglutination-inhibition test of measles using red blood cells from monkeys native to Indonesian and training personnel in a provincial health laboratory to use this test., This procedure is being used in connection with the new measles assessment and vaccination program for Indonesia. Laboratory assistance in the form of serological tests for scrub and murine typhus and arbovirus groups A and B was given to Indonesian medical teams assessing the health status of transmigration populations in several geographic locations.

During 1983, in-house virology training was provided for three Indonesian microbiologist for a total of eight weeks and on-site training in mosquito inoculation techniques to ten Indonesians. The development of virology capabilities at University of Gadjah Mada resulted in the first recoveries of virus in the Department of Microbiology, Faculty of Medicine.

Collaboration and standardization of laboratory procedures with AFRIMS, Bangkok was initiated in September 1983. By exchanging viral isolates and antisera, the comparability of results between the two laboratories could be assessed. This is necessary to better define the differences reported between dengue infections in the two locations. To date, all qualitative results are in agreement but a few quantitative values show some variation. This variation will receive more attention in 1984. Initial deposits were into the DOD SEA viruses repository.

No formal presentations or publications were made by members of the Virology Department in 1983. However, one Indonesian collaborator presented the data from the first year of the University of Gadjah Mada/ LITBANGKES Cooperative Virology Program (febrile illness study in Yogyakarta) at the Indonesian National Meetings in Microbiology. Dr. Converse is presently working on manuscripts covering the work he accomplished during his assignment at NAMRU-2.

ZOONOSES DIVISION

1. In 1983, the Zoonoses Division activities and accomplishments included the following:

a. Managing and maintaining the NAMRU-2 Jakarta Detachment Laboratory Animal Colony and providing technical assistance to animal users. This service was utilized by all NAMRU-2 Jakarta Detachment departments and by several host country agencies. The animal colony operation resulted in the production and utilization of approximately 1950 mice, 320 gerbils, 30 guinea pigs, 62 rabbits and 33 chickens, in addition to maintaining 3 cats and 4 geese and a "peacock in a mango tree". A non-human primate colony is maintained under contract at a separate location. Beside utilization at NAMRU-2, our laboratory animal production was used to support research projects in the Indonesian Research Institute for Animal Diseases (foot-and-mouth disease eradication program), in the Department of Parasitology, University of Indonesia, Jakarta (filariasis studies) and in the Departments of Parasitology and Microbiology at the University of Gadjah Mada, Yogyakarta.

b. Providing technical and professional assistance to the Virology Department in the laboratory and on field trips associated with febrile illness studies and myxovirus surveillance (see Virology for accomplishments).

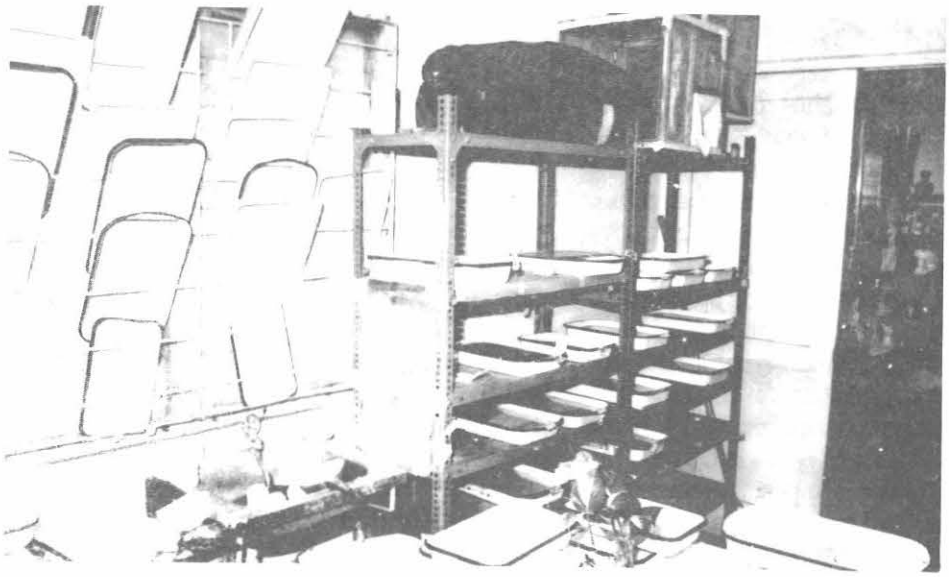
c. Preparing medical and graphic illustrations for NAMRU-2 Jakarta Detachment reports, publications and in-house remodelling projects.

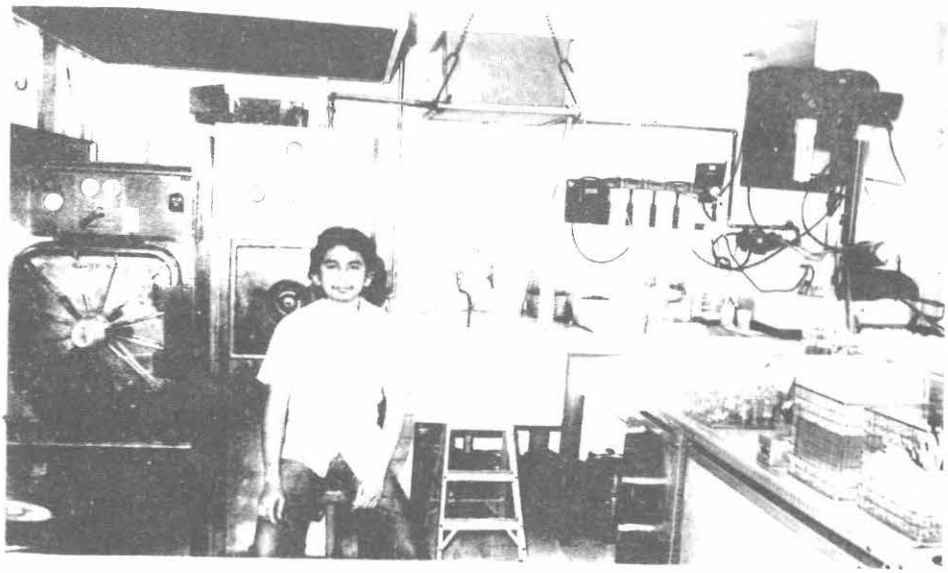
d. Updating NAMRU-2 Jakarta Detachment computer records for geographic locations of study sites, species sampled, and specimens collected.

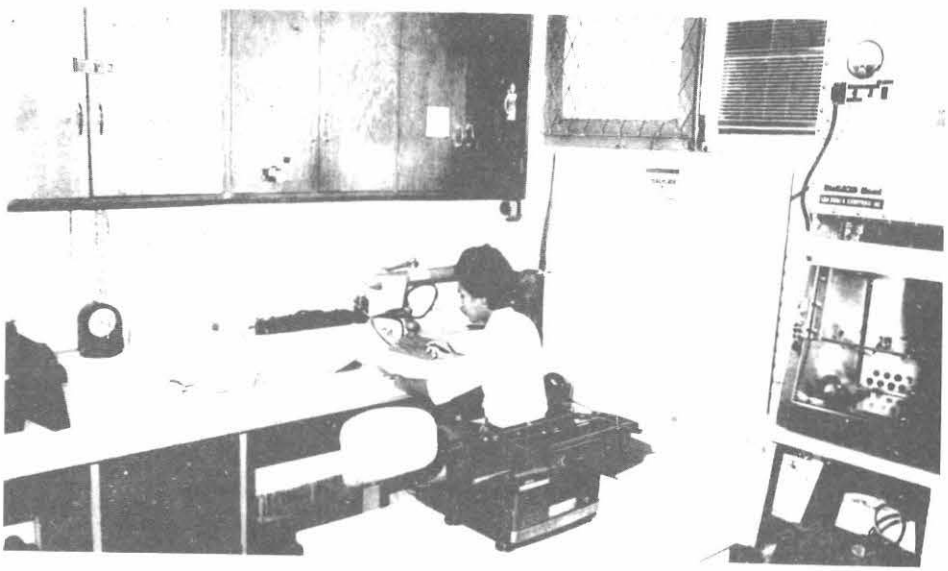
e. Making additions and maintaining NAMRU-2 mammal collection. The bats in this collection were a significant contribution for a paper prepared by Dr. Wim Bergmans, University of Amsterdam.

2. Publications.

Mr. Sukeri Sarbini, co-author on paper submitted by Dr. Wim Bergmans, Zoological Museum Amsterdam, University of Amsterdam. Classification of Indonesian bats.







IMMUNOPARASITOLOGY DEPARTMENT

Filariasis.

Infected 40 Presbytis cristata with Wuchereria bancrofti. To date, 14 monkeys have patent infections. Obtained complete humoral immune profiles on all monkeys throughout course of infection. Developed ELISA based on W. bancrofti L3 excretory-secretory antigens. Established optimum procedures for the care, maintenance and diet of P. cristata in captivity.

Produced successful human-human hybridomas and EBV transformed lymphocytes from humans that are positive for anti-W. bancrofti antibody. Cloning in progress.

Malaria.

Established P. falciparum in continuous in vitro culture, still stable after 10 months of culture. Successfully adapted 3 isolates of P. falciparum from Irian Jaya, Indonesia and 1 isolate from Flores, Indonesia, to continuous culture.

Used cultured malaria lines to develop in vitro inhibition assay to test effects of different human sera on parasite growth. Tested 79 sera from Tropical Splenomegaly Syndrome patients. Conducted in vitro drug sensitivity studies on P. falciparum isolated from patients at field sites and in NAMRU-2 Detachment laboratory.

Produced successful human-human hybridomas and EBV transformed lymphocytes from humans that are positive for anti-P. falciparum antibody. Cloning in progress.

Cultured macrophage from malaria and typhoid patients to assay for production of chemical mediators involved in pathogenesis of the disease.

Field Trips.

1. Parasitology Department - sponsored:

   a. Balikpapan, Kalimantan (filariasis)
   b. Buru Island (filariasis)
   c. Napu, Sulawesi (schistosomiasis, malaria)

2. Parasitology-Clinical Departments - jointly sponsored:

   a. Flores Island (malaria, filariasis)

3. Clinical Department sponsored (lab support provided by Parasitology Department)

   a. Irian Jaya (two trips - malaria)
   b. Flores (malaria)

DETACHMENT PUBLICATIONS AND PRESENTATIONS

OIC's Personal Publications.

Schistosomiais; Hunter Textbook of Tropical Medicine. 6th Ed. 1983. pp. 708-739.

Two papers accepted 1983 - published 1984.

Presentations.

In vitro antibody forming cell response of S. mansoni infected mice to lipopolysaccharide with specific reference to Salmonella species. American Society of Tropical Medicine Meetings, San Antonio, Texas.

Salmonella/Schistosomiasis Syndrome. Guest lecture Harvard School of Public Health.

Biostatistics in Medical Research (24 hour course), Indonesian Dental Research Institute.

"Staying Healthy in Indonesia". Quarterly lecture to newcomers in expatriot community.

Purnomo - Presentations.

1. Munawar, M., Purnomo, Livwarni dan Partono, F. Pengalaman pengendalian filariasis malayi dengan DEC dosis rendah oleh penduduk kepada penduduk di Desa Buyu dan Bukit, Kepulauan Riau. Pertemuan POKJA Depkes, 24-25 Pebruari 1983.

2. Purnomo. Diagnosa morfologi berbagai cacing Filaria di Indonesia. Pertemuan POKJA Fil. & Schist. Depkes, 24-25 Pebruari 1983.

3. Purnomo. Kunci bagan species cacing dewasa Wuchereria Silva Araujo, 1876 dan Brugai Buckley, 1960. Seminar Parasitologi Nasional II & Kongres P4I, Bandung, 1983.

4. Lestadi, J. Purnomo, Soemedhi, Oemirin, S. dan Haryanto, T. Perbandingan efektifitas antara chloroquine dan Fansidar terhadap malaria di daerah Timor Timur. Saminar Parasitologi Nasional II & Kongres P4I, Bandung, 1983.

5. Purnomo. Diagnosa berbagai larva infektif cacing filaria dalam tubuh nyamuk. Pertemuan Ilmiah Bagian Parasitologi, F.K.U.I., 1983.

6. Purnomo, Bakata, M. dan Partono, F. Usaha mengeluarkan berbagai macam cacing usus dengan pengobatan Trivexan. Seminar Parasitologi Nasional II & Kongres P4I, Bandung, 1983.

7. Purnomo, Sutanto, B.A. dan Yuwono, T.D. Perbandingan antara "Worm Load" dan "Worm Expulsion" cacing usus dengan menggunakan teknik modifikasi trichrome. Kongres dan Pentemuan Ilmiah Mikrobiologi & Parasitologi Kedokteran Indonesia II, Surabaya, 18-20 September 1983.

Purnomo - Publications.

1. Bain, O., Purnomo et Dedet, J.P. Une neuvelle Filaire, Chabfilaria yonathani n. gen., n. sp., Ochocercidae parasite de Xenarthre. Ann. Parasitol. Hum. Comp., 58:583-591, 1983.

2. Palmieri, J.R., Connor, D.H., Purnomo and Marwoto, H.A. Animal model of human disease. Bancroftian Filariasis. Wuchereria bancrofti infection in the Silvered Leaf Monkey (Presbytis cristatus). Am. J. Parasitol., 112:383-386, 1983.

3. Bain, O. et Purnomo. Description d'Icosiella laurenti n. sp., Filaire de Ranidae en Malaisie et hypothese sur l'evolution des Icosiellinae. (submitted)

Hilda Hadiputranto - Publications.

1. Hadiputranto, J., Rockhill, R., Sumarmo and Sutomo, A. 1983. Tetracycline resistant Campylobacter fetus subsp. jejuni in Jakarta. Medika, 2:151-152.

Sutanti Ratiwayanto - Publications.

1. Piessens, W., Hoffman, S., Ratiwayanto, S., Piessens, P., Partono, F., Kurniawan, L. and Marwoto, H. 1983. Opposing effects of filariasis and chronic malaria on Immunoregulatory T lymphocytes. Diagnostic Immunology, 1:257-260.

Budhi Leksana - Publications.

1. Daili, S., Judanarso, J., Djatmiko, M., Zubir, F., Sukaisih, E., Heryuni and Laksana, B. 1983. Stain PPNG pada lokasi wanita tuna susila di Jakarta. Majalah Dokter Keluarga, 2(7):362-363.

Sofyan Masbar - Publications.

1. Smrkovski, L., Hoffman, S., Purnomo, Hussein, R., Masbar, S. and Kurniawan, L. 1983. Chloroquine resistant Plasmodium falciparum on the island of Flores, Indonesia. Trans. Roy. Soc. Trop. Med. Hyg., 77(4): 451-462.

Dr. James R. Campbell - Presentations and Publications.

Presentations.

Malaria diagnosis and in vitro drug sensitivity testing at field locations. Ministry of Health Scientific Research Division Meeting, Jakarta, January 1983.

Continuous in vitro culture of Plamodium falciparum and hybridoma research at NAMRU-2 DET, Jakarta. Joint Army-Navy Military Medical Research Meeting, Baguio, R.P., May 1983.

Monoclonal antibodies in the diagnosis and treatment of parasitic diseases. University of Gadjah Mada, Yogyakarta, Indonesia, May 1983.

Hybridomas and monoclonal antibodies in malaria and filariasis vaccine research. University of Indonesia, June 1983.

Diagnosis and epidemiology of filariasis in Indonesia. International Allied Medical Association, Jakarta, July 1983.

Immunology lecture series (16 hours). Indonesian Navy Dental Post-Graduate Institute students, Jakarta, July 1983.

Wuchereria bancrofti in the leaf-monkey, Presbytis cristata. National Congress on Parasitology, Bandung, Indonesia. August 1983.

Theory of hybridoma production with applications in parasitology research. National Congress on Parasitology, Bandung, Indonesia, August 1983.

Immunological aspects of Wuchereria bancrofti infections in the leaf monkey, Presbytis cristata. International Congress for the Advancement of Veterinary Parasitology. Perth, W. Australia, August 1983.

Prostaglandins in murine schistosomiasis mansoni infections. University of California at Los Angeles, Los Angeles, California, November 1983.

Immunology of bancroftian filariasis in a primate model. University of California at Los Angeles, Los Angeles, California, November 1983.

In vitro Mefloquine resistance of Plasmodium falciparum from Indonesia. American Society of Tropical Medicine and Hygiene Annual Meeting, San Antonio, Texas, November 1983.

Publications.

a. Published abstracts:

Campbell, J.R., Hoffman, S.L., Harun, S., Dimpudus, A.J., Marwoto, H.A., Kumara Rai, N., Hadidjaja, P. and Laughlin, L.W. In vitro studies of the sensitivity of Plasmodium falciparum to mefloquine in Indonesia. Proceedings of Annual Meeting of American Society of Tropical Medicine and Hygiene, San Antonio, Texas, December 1983.

Piessens, W.F., Wadee, A.A., Hoffman, S.L., Ratiwayanto, S., Hussein, R., Kurniawan, L., Marwoto, H.A. and Campbell, J.R. Characterization of a lymphocytotoxin in sera from patients with tropical splenomegally syndrome (TSS). Proceedings of Annual Meeting of American Society of Tropical Medicine and Hygiene, San Antonio, Texas, December 1983.

b. Journal Articles:

Hoffman, S., Piessens, W., Ratiwayanto, S., Hussein, R., Kurniawan, L., Piessens, P., Campbell, J.R. and Marwoto H. Suppressor T lymphocytes are decreased in the Tropical Splenomegaly Syndrome. N. Engl. J. Med. (accepted 1983, in press 1984).

Hoffman, S., Masbar, S., Hussein R., Soewarta, A., Harun, S., Marwoto, H., Campbell, J., Smrkovski, L., Purnomo and Wiady, I. Absence of malaria mortality in villagers with chloroquine resistant Plasmodium falciparum treated with chloroquine. Trans. R. Soc. Trop. Med. (accepted 1983, in press 1984).

Hoffman, S., Harun, S., Campbell, J., Marwoto, H., Dimpudus, A., Rustama, D., Oetomo, H., Rai, N. and Laughlin, L. Prolonged incubation improves the micro in vitro test for determining the drug sensitivity of Plasmodium falciparum. Lancet (accepted 1983, in press 1984).

SUMMARY - 1983:

	Presentations	Publications
Dr. Campbell	12	5
Staff, Departments of Parasitology & Hybridoma	7	7
T O T A L	19	12

AWARDS - 1983: (Parasitology Department)

Dr. Campbell:

Letter of Appreciation, University of Gadjah Mada, Faculty of Medicine, Jogyakarta, Indonesia - for Seminar on Hybridomas and Monoclonal Antibody Technology.

Appointment as Lecturer in Immunology - Indonesian Navy Dental Post-Graduate Institute.

Letter of Appreciation, Indonesian Navy Dental Post-Graduate Institute - for lecture series in Immunology.

CLINICAL INVESTIGATION AND EPIDEMIOLOGY DEPARTMENT

Notable Events 1983.

March — Roof replacement finished - moved back into 3rd floor spaces. No lost work days in any department during entire construction.

May	Emergency replacement of generator - demonstration of NMRDC support when new generator arrived and installed in less than 60 days from failure of old machine.
August	LCDR Fred P. Paleologo, MC, USNR, reported for duty
September	NAMRU GAMES 1983 - physical fitness awareness obtained by extensive training for and participation in physical testing by active duty members, spouses and dependent children.
October	LT Charles D. Updegrove, MSC, USN, reported for duty
November	LT Cynthia Dilorenzo, MSC, USN, AO received U.S. Embassy Award for her outstanding work on the Housing Board Committee.
December	Six papers presented at the American Society of Tropical Medicine Meetings.

Other Events.

Navy Commendation Medal awarded to CDR David D. Edman, MSC, USN.

Twelve (12) technicians from various Indonesian Government agencies, the Indonesian military, and private sectors were trained in general and specific clinical microbiology and support procedures.

U.S. Embassy International School Support.

The Detachment provides certain media and laboratory support to the U.S. Embassy Health Unit. It also performs weekly microbiological testing of the potable water supplies from the International School.

PART V

AWARDS, HONORS AND NOTABLE EVENTS

AWARDS, HONORS AND NOTABLE EVENTS

BUILDING FIRE

On 1 October 1982, at approximately 0600, a fire of undetermined origin started two floors below the NAMRU spaces which at that time were located on the 12th floor of the Sarmiento building, downtown, Makati, Metro Manila. Flame, smoke, and water damage to NAMRU spaces and equipment were extensive. On 28 November 1982, NAMRU was relocated on the 4th floor, Accelerando Bldg., Makati, Metro Manila.

NAMRU MEDICAL LIBRARY DEDICATED

On 16 January 1984, the NAMRU Medical Library was officially dedicated in ceremonies which included both the incumbent Commanding Officer (Captain Schroeder) and the prospective Commanding Officer (Commander Schinski). Other VIP's in attendance included the Philippine Government's Minister of Health, Dr. Jesus C. Azurin, NAMRU-2 Scientific Director, Dr. John H. Cross, Acting Director of San Lazaro Hospital, Dr. Catherine Ranoa and most of the Bureau of Research and Laboratories, NAMRU and San Lazaro staffs. The facility was blessed by a priest of the Catholic church which is tradition in this country.

This facility, which was constructed from the ground up, is NAMRU's property and maintains over 11,800 medical books, journals and over 180 periodicals. The facility is the most complete, modern and well stocked medical library in the Republic of the Philippines.

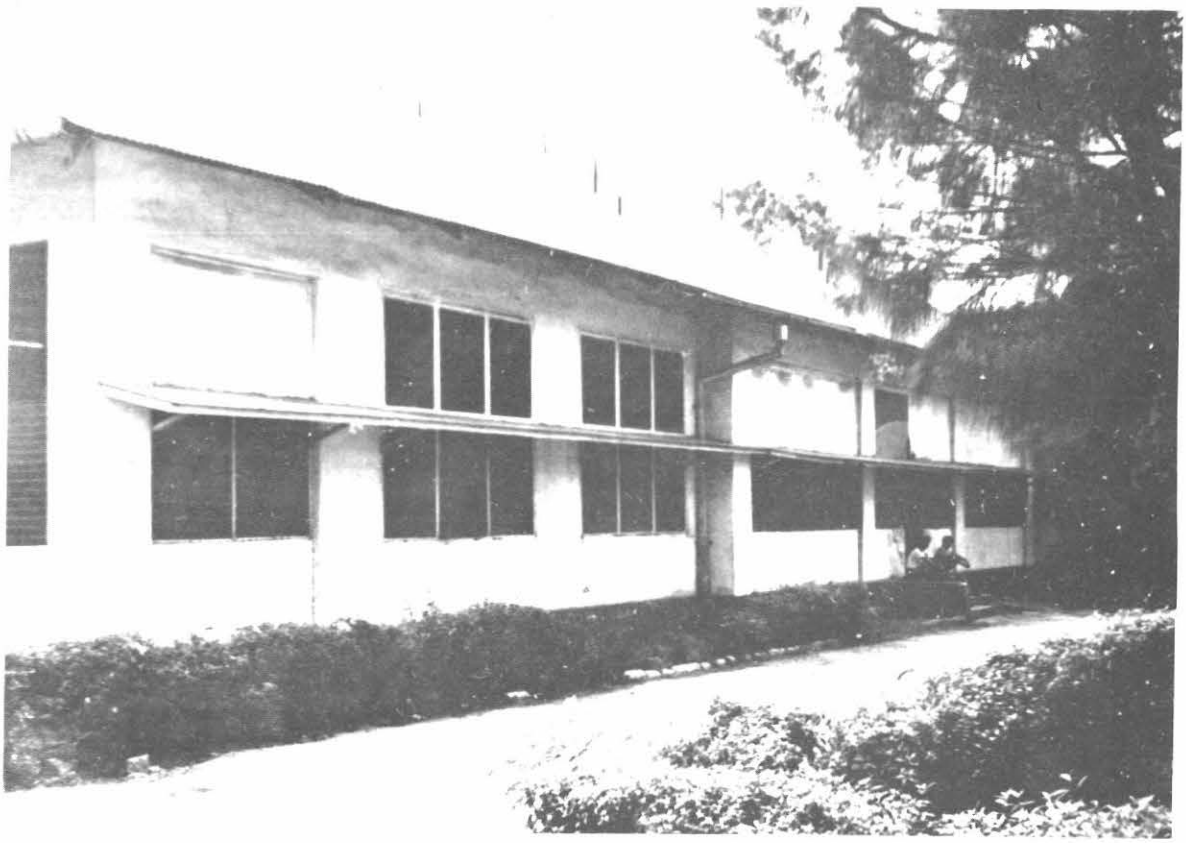
CHANGE OF COMMAND

On 20 January 1984 at 0900, Captain William H. Schroeder, MSC, USN, was relieved of command by Commander Vernon D. Schinski, MSC, USN after 4 1/2 years in command of NAMRU-2. Commander Schinski assumed command after reporting from the Naval Medical Research Institute, Bethesda, Maryland as Executive Officer.

PAVILION SEVEN AND EIGHT

Final plans for Pavilion Seven (7) were completed in March 1984. This facility which is slated for completion in late 1985 will house a new Virology laboratory and administrative spaces. It will be constructed from an existing building which is owned by the Ministry of Health. Pavilion Eight (8) has also been approved and will house a state-of-the-art rehydration unit which will serve as the model for the Philippines. It is slated for completion in the third quarter 1985.

PAVILION 8, SAN LAZARO HOSPITAL COMPOUND



PAVILION 7, SAN LAZARO HOSPITAL COMPOUND

NOTABLE EVENTS, 1983

A large field team worked in Rio Tuba, Palawan for 10 days in January carrying out a biomedical survey. Over 1,000 people were surveyed and stools and venous bloods mosquitoes and rat collected. The most notable finding was a new endemic focus of Wuchereria bancrofti. In February 1983 a small team visited southern Leyte to confirm a new focus of intestinal capillariasis. Over 350 people were examined and 14% were found to be infected with Capillaria philippinensis. In November/December small surveys were conducted in Mindanao to confirm pediatric amebiasis. This was not confirmed and only 1-2% of those examined were found to be stool or serologically positive for amebiasis. A survey was also conducted in central Luzon and over 50% found to be sero positive but the stool positivity rate was only about 4%. A survey was conducted in Mindoro to identify persons with taeniasis/cysticercosis. Stools and bloods from 100 persons were negative for tapeworms. We had one patient from the groups with cysticercosis who was successfully treated with praziquantrel.

The establishment of an arbovirus laboratory, contruction of library.

The most important event was the meeting of the Southeast Asian Department of Defense Regional Biomedical Research Laboratories in Baguio in May and visit to the laboratory by Col P. Winter, WRAIR, Washington, D.C., Col. M. Beneson, AFRIMS-Bangkok and several of his staff. Many of the scientific staff presented lectures at the Naval and Airforce Regional Medical Centers and teaching institution in Asia.

PART VI

DISTINGUISHED VISITORS

DISTINGUISHED VISITORS
(Manila Headquarters)

Dr. Ralph Barr
Entomologist
University of California at Los Angeles

Dr. Kerrison Juniper
Gastroenterologist
University of Southern Illinois

Dr. Mariano Yogore
Parasitologist
University of Chicago

Col. Philip E. Winter
Associate Director for Program Development
Walter Reed Army Institute of Research

LtCol. George E. Lewis
Commander
U.S. Army Medical Research Unit
Kuala Lumpur, Malaysia

Dr. Akira Shirai
Rickettsiology Department
U.S. Army Medical Research Unit
Kuala Lumpur, Malaysia

LtCol. Michael Benenson
Director
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

LtCol. Donald Burke
Virology Department
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

Major Richard Andre
Entomology Department
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

Major H. Kyle Webster
Immunology & Biochemistry Department
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

Captain Lorrin Pang
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

LtCol. Stephen M. Valder
Pest Management Staff Officer
Headquarters AFESC, Tyndall Air Force Base

Ms. Joan E. Scott, GM-13
Wildlife Biologist/Historic Preservation Staff Officer
Headquarters, AFESC, Tyndall Air Force Base

LtCol. Peter Echeverria
Chief Bacteriology
Armed Forces Research Institute for Medical Sciences
Bangkok, Thailand

Dr. R. L. Beaudoin
Naval Medical Research Institute
Bethesda, Maryland

Dr. John E. Gerber
Department of Morbid Anatomy
The Chinese University of Hongkong

Dr. Jay P. Sanford
Dean, School of Medicine
Uniformed Services University of the Health Sciences
Bethesda, Maryland

Mr. Rodney N. Hoats
Director of International Health Affairs
Office of the Assistant Secretary of Defense

Colonel Halloway
Psychiatry Department
Uniformed Services University of Health Sciences
Bethesda, Maryland

Captain Eric Henchal
Virologist
Walter Reed Army Institute of Research
Walter Reed Army Medical Center

Colonel Joel D. Brown
Walter Reed Army Institute of Research
Walter Reed Army Medical Center

Commander J. Eduardo Fajardo
Department of Pediatrics
Tripler Army Medical Center
Hawaii

Captain R. Rahe
Commanding Officer
Naval Regional Medical Clinic
Pearl Harbor, Hawaii

LCDR Robert Miller
Naval Environmental and Preventive Medicine Unit #6

LCDR Steve Cunnion
Naval Environmental and Preventive Medicine Unit #6

LCDR Robert C. Rockhill
Naval Medical Research and Development Command
Bethesda, Maryland

Several groups of Clark AFB, Subic Naval Base
Physicians/Nurses/Veterinarians

DISTINGUISHED VISITORS
(Jakarta Detachment)

Ambassador John Holdridge, U.S. Ambassador to Indonesia

Dr. Richard Beaudoin, Head, Malaria Sporozoite Vaccine Program, Naval Medical Research Institute, Bethesda, Maryland.

Dr. James Jensen, Head, Malaria Research Division, Michigan State University, Lansing, MI.

Dr. Jerome Keusch, Director, Geographic Medicine, Tufts University Medical School, Boston, MA.

Dr. Willy Piessens, Head, Filaria Research Program Harvard School of Public Health, Boston, MA.

Dr. Timothy Flanigan, Medical Student, Cornell Medical School, New York, NY.

Dr. Samuel Miller, Senior Resident, Massachussetts General Hospital, Boston, MA.

Brian Kelso, Medical Student, Case Western Reserve, Cleveland, OH.

Captain William H. Schroeder, MSC, USN, Outgoing NAMRU-2 Commanding Officer

Commander Vernon D. Schinski, MSC, USN, Incoming NAMRU-2 Commanding Officer

LCDR M. E. Goodloe, MSC, USN, NAMRU-2 Administrative Officer

Guest Scientists, Students and Distinguished Visitors

PART VII

PUBLICATIONS

PUBLICATIONS
Manila & Jakarta

Beasley, R.P. and Hwang, L-Y. (1983). Postnatal infectivity of hepatitis B surface antigen-carrier mothers. J. Infect. Dis., 147:185-190.

Buck, R.L., Alcantara, A.K., Uylangco, C.V. and Cross, J.H. (1983). Malaria at San Lazaro Hospital, Manila, Philippines, 1979-1981. Am. J. Trop. Med. Hyg., 32:212-216.

Cross, J.H. (1983). Angiostrongylus. In: Parasitic Zoonoses in the Tropics, Philippine Society of Parasitology Golden Anniversary, Quezon City, Philippines, pp.34-41.

Cross, J.H. and Basaca-Sevilla, V. (1983). Experimental transmission of Capillaria philippinensis to birds. Trans. Roy. Soc. Trop. Med. Hyg., 77:511-514.

Escamilla, J., Santiago, L.T., Uylangco, C.V. and Cross, J.H. (1983). Evaluation of sodium polyanethanol sulfonate as a blood culture additive for recovery of Salmonella typhi and Salmonella paratyphi A. J. Clin. Microbiol., 18:380-383.

Hadi, T.R., Sarbini, S. and Brown, R.J. (1983). Small mammalian ectoparasites from Mt. Bromo Area, East Java, Indonesia. Southeast Asian J. Trop. Med. Publ. Hlth., 14:422-425.

Hadiputranto, H., Rockhill, R.C., Sumarmo, and Sutomo, A. (1983) Tetracycline resistant campylobacter fetus subsp. jejuni in Jakarta Medika, 2:151-152.

Hoffman, S.L., Campbell, J.R., Marwoto, H.A., Rustama, D., Kumara Rai N., Harun S., Purnomo, Dimpudus, A.J., Oetomo, H.S., Laughlin, L.W. (1984). Prolonged incubation improves the microscale in-vitro test for drug sensitivity of Plasmodium falciparum. Lancet, 7-9.

Hoffman, S.L., Punjabi, N.H., Kumala, S. Moechtar, A. Pulungsin, S.P., Rafajati, A., Rockhill, R.C., Woodward, R.E. and Loedin, A.A. (1984). Reduction of mortality in chloramphenicol-treated severe typhoid fever by high dose dexamethasone. New England J. Med., 310:82-88.

Hwang, L-Y., Beasley, R.P., Yang, C-S, Hsu, L-C, and Chen, K-P. (1983). Incidence of hepatitis A virus infection in children in Taipei, Taiwan. Intervirology, 20:149-154.

Huber, P.M., Schmidt, G.D. and Kuntz, R.E. (1983). Ascarops talpa sp. n. (Nematoda: Spirocercidae) from the Formosan mole, Talpa micrura insularis, in Taiwan. J. Parasitol., 69:761-763.

Jensen, L.A., Schmidt, G.D., and Kuntz, R.E. (1983). A survey of cestodes from Borneo, Palawan, and Taiwan, with special reference to three new species. Proc. Helminthol. Soc. Wash., 50:117-134.

Lee, V.H., Atmosoedjono, S., Rusmiarto, S., Aep, S. and Semendra, S. (1983). Mosquitoes of Bali Island, Indonesia: common species in the village environment. Southeast Asian J. Trop. Med. Publ. Hlth., 14:298-307.

Lee, V.H., Atmosoedjono, S., Dennis, D.T. and Suhaepi, A. (1983). The anopheline (Diptera: culicidae) vectors of malaria and bancroftian in Flores Island, Indonesia. J. Med. Entomol., 20:577-578.

Olson, J.G., Atmosoedjono, S., Lee, V.H. and Ksiazek, T. (1983). Correlation between population indices of Culex tritaeniohynchus and Cx. gelidus (Diptera: Culcidae) and rainfall in Kapuk, Indonesia. J. Med. Entomol., 10:108-109.

Olson, J.G., Ksiazek, T.G., Gubler, D.J., Lubis, S.I., Simanjuntak, G., Lee, V.H., Nalim, Juslis, K. and See, R. (1983). A survey for arboviral antibodies in sera of humans and animals in Lombok, Republic of Indonesia. Annals Trop. Med. Parasit., 77:131-137.

Piessens, W.F., Hoffman, S.L., Ratiwayanto, S., Piessens, P.W., Partono, F., Kurniawan, L. and Marwoto, H.A. (1983). Opposing effects of filariasis and chronic malaria on immunoregulatory T lymphocytes. Diagnostic Immunol., 1:257-260.

Rockhill, R.C., Lesmana, M. and Moechtar, A. (1983). Improved method, using staphylococcal Beta-hemolysin, for detection of hemolysin(s) produced by Vibrio cholerae biotype El Tor. Southeast Asian J. Trop. Med. Publ. Hlth., 14:181-185.

Smrkovski, L.L., Alcantara, A., Buck, R.L., Sy, N.E., Rodriguez, C., Macalagay and Uylangco, C.B. (1983). Chloroquine resistant Plasmodium falciparum: effect of rabbit serum and incubation time on the in vitro (Microtechnique) prediction of in vivo resistance. Southeast Asian J. Trop. Med. Publ. Hlth., 14:228-234.

Smrkovski, L.L., Hoffman, S.L., Purnomo, Hussein, R.P., Masbar, S. and Kurniawan, L. (1983). Chloroquine resistant Plasmodium falciparum on the island of Flores, Indonesia. Trans. Roy. Soc. Trop. Med. Hyg., 77:459-562.

Collaborative Studies

Beasley, R.P., Hwang, L-Y., Stevens, C.E., Lin, C-C, Hsieh, F-J., Sun, T-S., and Szmuness, W. (1983). Efficacy of hepatitis B immune globulin for prevention of perinatal transmission of the hepatitis B virus carrier state: final report of a randomized double-blind, placebo-controlled trial. Hepatology, 3:135-141.

Ng., W.S., Chau, P.Y., Ling, J., Echeverria, P., Rockhill, R., and Arnold, K. (1983). Penicillinase-producing Neisseria gonorrheae isolates from different localities in Southeast Asia., Br. J. Vener. Dis., 59:232-236.

LIST OF WORK UNITS
(Manila)

1498's

a.	3M161102BS10;AF429	"Infectious diseases and their vectors in the Philippines"
b.	3M162770A870;AQ125	"The use and development of monoclonal antibodies for the serodiagnosis of infectious diseases in the Philippines"
c.	3M162770A870;AN315	"Treatment of infectious diseases of military importance in the Philippines"

LIST OF WORK UNITS
(Jakarta)

a.	3M161102BS10;AF428	"Infectious diseases and their vectors in Indonesia"
b.	3M161102A870;AF124	"Immunological studies of infectious diseases of humans and production of human monoclonal antibodies for diagnosis, treatment and prevention"
c.	3M161102A870;AQ123	"Development of rapid detection methods to identify the etiologic agent of diarrheal and febrile diseases in Indonesia"
d.	3M162770A870;AN314	"Laboratory animal model for Bancroftian Filariasis"

IRs

a.	MR000.01.01-2096	"Non-A, Non-B hepatitis in the Philippines"
b.	MR000.01.01-2097	"Etiology of meningitis in the Philippines"
c.	MR000.01.01-2098	"Chlamydial disease in the Philippines"

Students/Trainees/Fellows

Ross Hansen - Department of Parasitology, University of Queensland, Brisbane, Australia
Jan/Feb 1983

Rosario Guinto - University of Santo Tomas
Bacteriology
March/June 1983

Marivic Fernandez - University of Santo Tomas
Laboratory training all labs
June 1983/Feb 1984

Sarffudin Mama - Yale University
Malaria culture
July/August 1983

Teresita Atienza - National Institute of Science and Technology
Malaria cultures
Sept/Oct 1983

Rosalina Perez - Research Institute for Tropical Medicine
Malaria cultures
Sept/Oct 1983

Evalina P. Naval Lagamayo (Post Doctoral Fellow)
Arbovirology
University of Santo Tomas
Jul 1983/Jul 1984

Pilar Garredo-Gavinio (Post Doctoral Fellow)
Far Eastern University
Tropical Medicine
Aug 83/Aug 84